Adobe

Adobe® Photoshop® CS

User Guide

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Adobe

Adobe® Photoshop® CS

User Guide

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Adobe® Photoshop® CS User Guide for Windows® and Macintosh

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Learning Photoshop CS

Welcome to Adobe® Photoshop® CS and Adobe ImageReady® CS, the professional image-editing standard for photographers, professional designers, and graphics producers.

Photoshop and ImageReady provide a consistent work environment with other Adobe applications including Adobe Illustrator®, Adobe InDesign®, Adobe GoLive®, Adobe LiveMotion™, Adobe After Effects®, and Adobe Premiere®.

Getting help

Adobe provides a variety of options for you to learn Photoshop and ImageReady.

Finding help on Photoshop features

If you...	Try this...
Want information about installing Photoshop	• Follow the on-screen installation instructions. For more detailed information, see the *How To Install* file on the CD.
Are new to Photoshop	• Browse through the information in "Working with Photoshop and ImageReady" on page 3. • See "Looking at the Work Area" on page 9 to get familiar with the work area and tools. • Click Learn the Basics from the Welcome screen. (Choose Help > Welcome Screen.) • Use the How To tips in Help for instructions on common tasks such as fixing photos, working with layers, or painting. Choose one of the How To tips from the Photoshop or ImageReady Help menu.
Are upgrading from an older version of Photoshop	• See the What's New information on the Photoshop Welcome screen. Choose Help > Welcome Screen. • Browse through the information in "Working with Photoshop and ImageReady" on page 3.
Are looking for a detailed information about a feature	• Try searching for the feature in Help or looking it up in the index.

Finding help on Photoshop features	
If you...	**Try this...**
Want to learn new techniques for using Photoshop and ImageReady	• See the tutorials on the Adobe Studio Web site at www.studio.adobe.com. • Try one of the techniques in "Tips and Tricks from the Experts." Choose Help > Welcome Screen and click the Tips and Tricks link.
Want a PDF version of the Photoshop/ImageReady Help	• See the *PhotoshopCSHelp.pdf* file on the CD.
Want information on keyboard shortcuts	• See the Keyboard Shortcuts section of Photoshop Help.

Finding Photoshop training resources	
If you...	**Try this...**
Want to obtain in-depth training	• See the tutorials on the Adobe Studio Web site at www.studio.adobe.com. • Browse the Adobe Press materials at www.adobepress.com (English only), and the available training resources at www.adobe.com (choose Support > Training). • For step-by-step lessons, consider the Adobe Classroom in a Book series. • For in-depth reference information, consider the RealWorld series.
Are looking for background information on Web design	See the Adobe Press section of the Adobe Web site at www.adobe.com/misc/books.html.
Want to access the Developer Knowledge-base or software developer kits (SDKs)	See the Adobe Solutions Network (ASN) section of the Adobe Web site at http://partners.adobe.com/asn/photoshop/ (English only).
Want information about becoming an Adobe Certified Expert, Adobe Certified Instructor, or Adobe Authorized Learning Provider	Visit the Partnering with Adobe Web site at www.partners.adobe.com. Certification is available for several different geographical regions.

Finding support for Photoshop	
If you...	**Try this...**
Want customer or technical support	• Refer to the technical support card provided with your software. • Register your software and receive technical support for up to 90 days from the date of your first call (terms may vary depending on country of residence). • See the Adobe Photoshop support page at www.adobe.com/support/products/photoshop.html. • Read the ReadMe file installed with Photoshop for information that became available after this guide went to press.
Want answers to common troubleshooting questions	Search the Adobe Support Knowledgebase and Photoshop Top Issues at www.adobe.com/support/products/photoshop.html.
Want to register your copy of Photoshop	• Fill out and return the registration card included with your software package. • Access the online registration form at any time by choosing Help > Registration.
Want access to a multitude of Photoshop-specific information, such as downloads, updates, patches, plug-ins, and links to user forums	Visit the Photoshop pages on Adobe Studio at www.studio.adobe.com.

Working with Photoshop and ImageReady

Photoshop provides a rich graphics toolset for digital photography, print production, Web design, and video production.

If you work with digital photos

- Read "Basic steps for correcting images" on page 104. You'll get an overview of the many tonal and color correction tools in Photoshop.
- Process digital camera raw files within Photoshop to get the most control and best image quality from these files. See "Working with camera raw image files" on page 61.
- Retouch photos, remove dust spots, and correct image flaws while preserving tonality and texture. See "Using the Healing Brush tool (Photoshop)" on page 148.
- Quickly fix red eye caused by photo flash. See "Using the Color Replacement tool" on page 151.

- Create panorama photos by stitching multiple images together. See "Creating panoramic images using Photomerge (Photoshop)" on page 154.
- Manage and preview photos on a digital lightbox using the file browser. See "Using the File Browser (Photoshop)" on page 79.
- Create a contact sheet of images. See "Creating contact sheets" on page 310.
- Present your photos in a digital slideshow. See "Creating a PDF presentation" on page 315.
- Quickly create a gallery of images for your Web site using one of several professionally designed page templates. See "Creating Web photo galleries (Photoshop)" on page 266.

If you want the color on your prints and monitor to match

- Read "An introduction to color management" on page 93.
- Use a printer color profile as described in "Basic steps for producing consistent color" on page 95 and then use the Photoshop print setting and your printer driver color management settings. See "Using color management when printing" in Photoshop Help.

If you design Web pages

- Read the overview of Photoshop and ImageReady Web design tools and learn about the ImageReady object-based design tools. See "About designing Web pages with Photoshop and ImageReady" on page 243.
- Optimize images for efficient Web download. See "About optimization" on page 281.
- Manage slices, rollovers, image maps, and animations in the Web Content palette. See "Using the Web Content palette" on page 271.
- Create instant GIF and SWF animations from layered Photoshop files. See "Animations" on page 279.
- Export ImageReady designs, animations, and graphics to the Macromedia® Flash™ format. See "Saving files in SWF format (ImageReady)" on page 300.

If you design video graphics

- Use video document presets with action-safe and title-safe guides. See "Saving images for use in video" on page 321.
- View images on your computer monitor and NTSC external monitor simultaneously without distortion. See "Saving images for use in video" on page 321.

If you perform the same tasks on several files

- Learn to record and play back actions to automate repetitive tasks. See "About actions" in Photoshop Help.
- Write scripts using Visual Basic, Applescript, or Javascript. See the documentation in your Photoshop CS/Scripting Guide folder.

Automate graphic production using data sets. See "Creating templates for data-driven graphics (ImageReady)" in Photoshop Help.

What's New in Photoshop CS

Create the highest quality images, and manage your work more efficiently, with the new features and enhancements of Adobe Photoshop CS and its integrated Web production application, Adobe ImageReady CS.

Photoshop CS for All Users

No matter how you use Photoshop CS, you can take advantage of improved file management, and better ways to track and securely share your work.

Enhanced File Browser In Adobe Photoshop CS, the File Browser comes into its own as your digital imaging hub. With flags, keywords, and editable metadata, you can now use the File Browser to quickly organize and locate the image assets you need. Perform batch procedures on groups of images without having to first open the image files in Photoshop. (See "Using the File Browser (Photoshop)" on page 79.)

Easily customize your keyboard shortcuts Create, edit, and save multiple keyboard shortcut sets for menu items, tools, and palette commands, so the functions that you use most are always at your fingertips. (See "Customizing keyboard shortcuts" on page 45.)

Quickly create, view, and edit custom file information Use the File Browser to quickly search for files using editable metadata, without having to open each file. Fully customize your image metadata with custom panels and fields in the File Info dialog, and use the File Browser to edit the metadata of one or many images at a time. (See "Adding metadata to files" on page 88.)

Create slide shows and PDF presentations Easily bind multiple files into a single, multi-page Adobe PDF document, complete with optional page transitions and security. (See "Creating a PDF presentation" on page 315.)

Collaborate with Web photo galleries Use professionally-designed Web Photo Gallery templates, including support for client feedback with no extra Web coding required. (See "Creating Web photo galleries (Photoshop)" on page 266.)

Track your editing history Save your editing history in a external log file and in metadata attached to individual files. (See "Working with the Edit History Log" on page 30.)

Easily access and use multiple filters The new Filter Gallery brings Photoshop CS filters into a single, easy-to-use dialog. Now you can access, control, and apply multiple filters at once, with a new, larger preview for easier planning of stacked filter effects. (See "Using the Filter Gallery" on page 237.)

Use enhanced scripting Save time by automating repeated tasks, such as outputting your layers to files or saving Layer Comps as separate pages of an Adobe PDF file, using custom or new built-in scripts. See the documentation available in your Photoshop CS/Scripting Guide folder.

Customize the Help menu Use the new how-to topics by choosing them from the Help menu. Or, create your own how-to topic and have it appear in the Help menu. (For more information, choose Help > How to Create How Tos.)

PhotoshopCSforphotographers

New tools, enhanced features, richer images—Adobe Photoshop CS meets the needs of today's photographer.

Control your raw camera images The new generation Camera Raw plug-in is incorporated directly into Photoshop CS, allowing direct manipulation of raw camera data, for the ultimate control over image preprocessing. Camera Raw features new color calibration controls, batch processing through the File Browser, and support for most major digital camera models. (See "Working with camera raw image files" on page 61.)

Comprehensive 16-bit editing All core Photoshop features are now available to 16-bit images, including layers, painting, text, and shapes.

Match colors fast Apply the color scheme of one image to another, or one layer to another, to easily achieve a consistent look between shots in fashion or commercial photography. (See "Using the Match Color command (Photoshop)" in Photoshop Help.)

View live histograms as you work View an image and its histogram simultaneously with the new Histogram palette, allowing you to monitor the changes in your image as you make them. (See "Using a histogram to view the tonal range of an image (Photoshop)" on page 106.)

Create lens blur effects Easily produce the effect of highlights taking on the shape of the camera lens aperture. Lens Blur can be applied to an entire image or selection, or it can use an alpha channel as a depth map. (See "Blur filters" in Photoshop Help.)

Simulate photo filter effects Customize filter adjustment layers to simulate the effect of standard photographic lens filters. (See "Using the Photo Filter command (Photoshop)" in Photoshop Help.)

Easily correct exposure problems Use the Shadow/Highlight adjustment to modify shadows and highlights while preserving existing image midtones, easily correcting over- and underexposed areas in any image. (See "Using the Shadow/Highlight command (Photoshop)" in Photoshop Help.)

Quickly replace color Effortlessly change the color of any area of an image, while retaining the original texture and shading, with the new Color Replacement tool. (See "Using the Color Replacement tool" on page 151.)

Automatically crop and straighten Take the pain out of scanning multiple images. Place one or more photos onto a scanner bed, scan them into Photoshop, and then run Crop and Straighten to let Photoshop automatically copy each image into its own document and rotate it as necessary. (See "Using the Crop and Straighten Photos command (Photoshop)" on page 141.)

Create panoramas fast Combine images into seamless panoramas, with each image optionally preserved to a separate layer for even more control over the final output. (See "Creating panoramic images using Photomerge (Photoshop)" on page 154.)

Customize your picture packages Picture Package gives you a variety of ways to easily combine multiple images, or multiple instances of one image, in a single print. For Photoshop CS, the Picture Package window now allows you to interactively edit existing layouts, making it easy to precisely control image position and spacing. (See "Creating picture packages" on page 312.)

Photoshop CS for graphic Designers

Explore new possibilities and streamline your work with Photoshop CS innovations for graphic designers.

Place editable text on a path and in a shape Create and manipulate fully editable text on any path, or inside any shape, for eye-catching typographic designs. (See "Creating text on a path (Photoshop)" in Photoshop Help.)

Create alternate designs in a single image Capture multiple design variations as individual Layer Comps in a single file; then quickly output them to provide alternates for client review. (See "Working with layer comps" on page 226.)

Think big with huge document support Create and work with images up to 300,000 by 300,000 pixels, with up to 56 channels per file. (See "Large Document Format (PSB)" in Photoshop Help.)

Photoshop CS for video and filmmakers

Remove the guesswork from designing for DVD, video, and film, and achieve tighter integration with motion graphics software such as Adobe® Premiere® and Adobe® After Effects®.

Create non-square pixel documents Work with different aspect ratios without the distortion caused by viewing non-square images on a computer monitor, seeing them exactly as they will appear when viewed on a standards-compliant external monitor. (See "Saving images for use in video" on page 321.)

Choose from video document presets with automatic guides Use new, customizable document presets in standard video sizes and aspect ratios, with automatic action-safe and title-safe guides, for easier setup and creation of files for DVD, video, and film. (See "Saving images for use in video" on page 321.)

Easily export layers to files Integrate your layered Photoshop CS artwork with a variety of editing and compositing systems more efficiently, using the Export Layers to Files command. (See "Exporting layers as files (ImageReady)" on page 303.)

ImageReady CS for Web professionals

Prepare Web graphics quickly and efficiently with the improved ImageReady CS features and interface for Web design and production.

Enjoy a Web-focused interface Easily select, group, and manipulate multiple objects using automatic Smart Guides, and organize nested object groups up to five levels deep. (See "About designing Web pages with Photoshop and ImageReady" on page 243.)

Export to Macromedia® Flash™ (SWF) Export directly to Flash (SWF), with preserved vectors and dynamic text including embedded fonts. Export each layer to its own SWF file, allowing each file to be opened in Flash as its own symbol on its own layer. (See "Saving files in SWF format (ImageReady)" on page 300.)

Output enhanced HTML Create leaner, more easily edited HTML, with new controls for nested tables, XHTML, and more. (See "About designing Web pages with Photoshop and ImageReady" on page 243.)

Create and edit interactive elements easily with the new Web Content palette. Fine-tune your control over remote rollover slices with the new point-and-shoot targeting system. Create multiple slice sets in a single document, and combine slice sets and layer comps to quickly switch among and export different document configurations. (See "Using the Web Content palette" on page 271.)

Create dynamic content fast with variables and data sets Directly define and edit variables and data sets, and easily import database and spreadsheet content for automated graphics production. (See "Creating templates for data-driven graphics (ImageReady)" in Photoshop Help.)

Enjoy enhanced automation with conditional actions Using the Insert a Step button in the Actions palette, conditional logic can now be inserted in ImageReady CS actions. With conditional logic, ImageReady CS will scan for certain image characteristics (aspect ratio, dimensions, filename, etc.) and perform a step only if the characteristics match the setting in the step. (See "Inserting Conditionals (ImageReady)" in Photoshop Help.)

Easily export multiple files from selected states Instantly create separate HTML pages for each selected state, by outputting multiple files for slices containing selected states. This new capability of ImageReady CS makes quick work of designing Web pages where different images are displayed in the same area by the state of different rollovers. (See "Saving selected rollover states to Web pages" on page 279.)

Chapter 1: Looking at the Work Area

Welcome to Adobe Photoshop and Adobe ImageReady, two applications that give you an efficient work area and user interface to create and edit images for both print and the Web.

Using the Welcome window

When you launch Photoshop or ImageReady, the Welcome window automatically appears. Use this window to learn about Photoshop or ImageReady by reading tutorials, or viewing a movie about new features. In Photoshop, you can also learn how to set up a color management system.

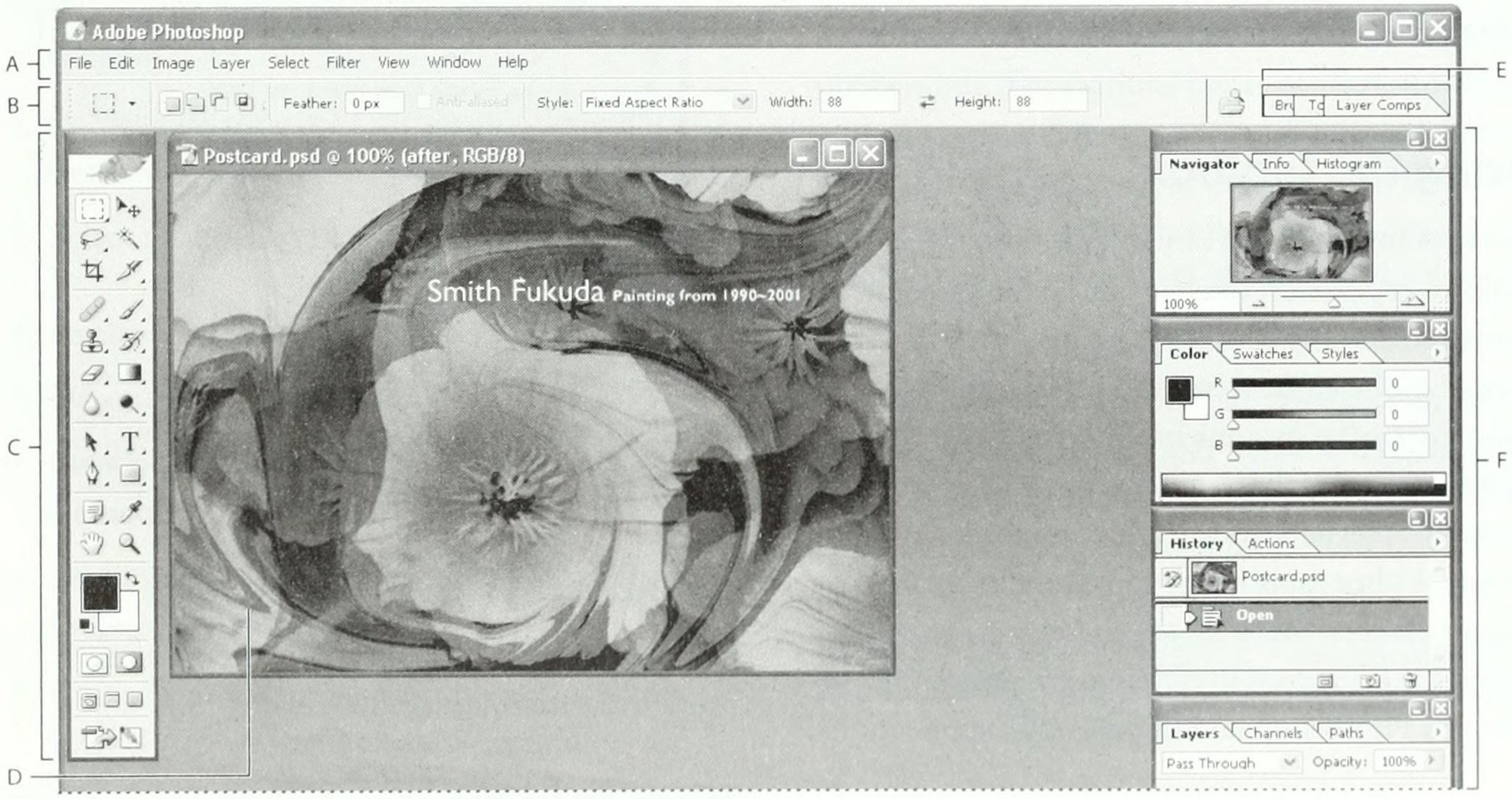
To use the Welcome window:

1 Choose Help > Welcome Screen to display the window if it's not already open.

2 Select one of the options in the window to learn more about Photoshop or ImageReady.

Getting familiar with the work area

The Photoshop and ImageReady work area is arranged to help you focus on creating and editing images.



Photoshop work area
***A.** Menu bar **B.** Options bar **C.** Toolbox **D.** Active image area **E.** Palette well **F.** Palettes*

About the work area

The work area consists of the following components:

Menu bar The menu bar contains menus for performing tasks. The menus are organized by topic. For example, the Layers menu contains commands for working with layers.

Options bar The options bar provides options for using a tool. (See "Using the options bar" on page 11.)

Toolbox The toolbox holds tools for creating and editing images. (See "Using the tools" on page 10.)

Palette well (Photoshop) The palette well helps you organize the palettes in your work area. (See "Using the palette well" on page 12.)

Palettes Palettes help you monitor and modify images. (See "Using palettes" on page 13.)

Using the toolbox

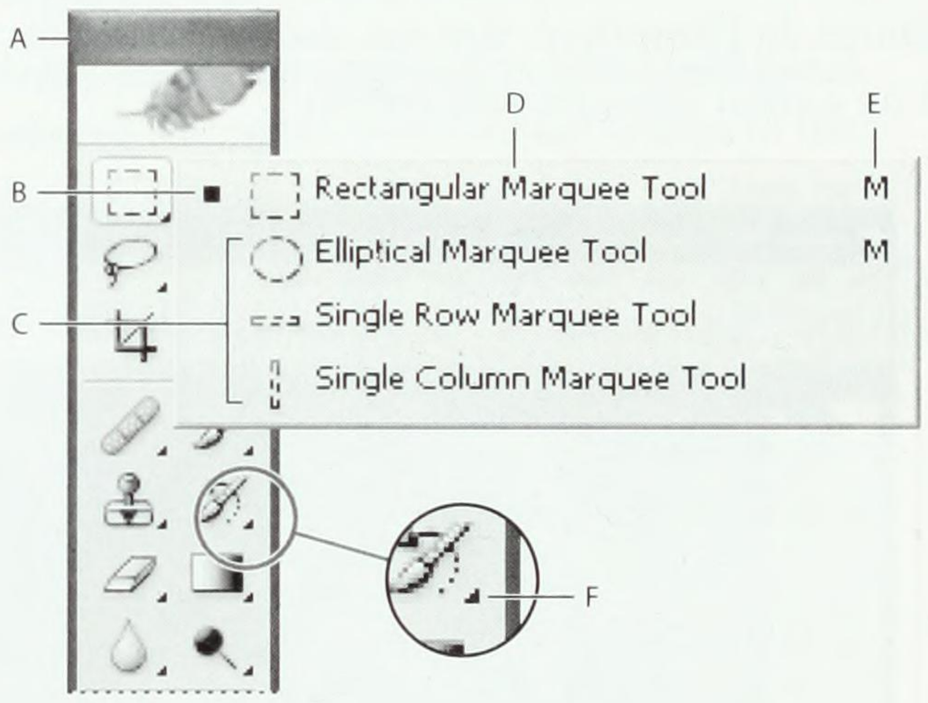
The first time you start the application, the toolbox appears on the left side of the screen. Some tools in the toolbox have options that appear in the context-sensitive tool options bar. (See "Using the options bar" on page 11.) These include the tools that let you use type, select, paint, draw, sample, edit, move, annotate, and view images. Other tools in the toolbox allow you to change foreground/background colors, go to Adobe Online, work in different modes, and jump between Photoshop and ImageReady applications.

For more information on the foreground and background color controls, see "Choosing foreground and background colors" on page 179.

For an overview of each tool, see the "Toolbox overview" topics in Photoshop Help.

Using the tools

You select a tool by clicking its icon in the toolbox. A small triangle ◢ at the lower right of a tool icon indicates hidden tools. Positioning the pointer over a tool displays a tool tip with the tool's name and keyboard shortcut.



Using the selecting tools
A. *Toolbox* ***B.*** *Active tool* ***C.*** *Hidden tools* ***D.*** *Tool name* ***E.*** *Tool shortcut* ***F.*** *Hidden tool triangle*

To show or hide the toolbox:

Choose Window > Tools. In the menu, a check mark indicates that the item is showing.

To move the toolbox:

Drag the toolbox by its title bar.

To select a tool:

Do one of the following:

- Click the tool's icon. If the icon has a small triangle at its lower right corner, hold down the mouse button to view the hidden tools. Then, click the tool you want to select.
- Press the tool's keyboard shortcut. The keyboard shortcut is displayed in its tool tip. To cycle through hidden tools, hold down Shift and press the tool's shortcut key.

To view a list of keyboard shortcuts, see Photoshop Help.

To enable or disable cycling through a set of hidden tools (Photoshop):

1 Do one of the following:

- In Windows, choose Edit > Preferences > General.
- In Mac OS, choose Photoshop > Preferences > General.

2 Select or deselect Use Shift Key for Tool Switch.

To display or hide tool tips:

1 Do one of the following:

- In Windows, choose Edit > Preferences > General.
- (Photoshop) In Mac OS, choose Photoshop > Preferences > General.
- (ImageReady) In Mac OS, choose ImageReady > Preferences > General.

2 Select or deselect Show Tool Tips.

Note: *Tool tips may not be available in dialog boxes.*

Using the tool pointers

When you select most tools, the pointer matches the tool's icon. The marquee pointer appears by default as cross hairs +, the text tool pointer appears as an I-beam I, and painting tools default to the Brush Size icon.

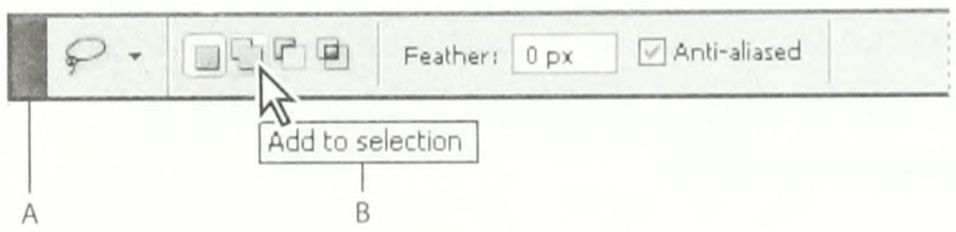
Each default pointer has a different *hotspot*, where an effect or action in the image begins. With most tools, you can switch to precise cursors, which appear as cross hairs centered around the hotspot.

You can change the appearance of tool pointers. To learn more, see Photoshop Help.

Using the options bar

Most tools have options that are displayed in the options bar. The options bar is context sensitive and changes as different tools are selected. Some settings in the options bar are common to several tools (such as painting modes and opacity), and some are specific to one tool (such as the Auto Erase setting for the Pencil tool).

You can move the options bar anywhere in the work area using the gripper bar, and dock it at the top or bottom of the screen. Tool tips appear when you hold the pointer over a tool.



Lasso options bar
A. *Gripper bar* ***B.*** *Tool tip*

To view tool options in the options bar:

Do one of the following:

- Choose Window > Options.
- Click a tool in the toolbox.

To return a tool or all tools to the default settings:

Do one of the following:

- Click the tool icon on the options bar, and then choose Reset Tool or Reset All Tools from the context menu.
- (ImageReady) In Windows, choose Edit > Preferences > General, and then click Reset All Tools. In Mac OS, choose ImageReady > Preferences > General, and then click Reset All Tools.

To move the options bar:

Drag the options bar by the gripper bar at its left edge.

Using the palette well

The Photoshop options bar includes a palette well that helps you organize and manage palettes. The palette well stores, or docks, palettes that you use frequently, without having to keep them open on the work area.

The palette well is available only when using a screen resolution greater than 800 pixels x 600 pixels (a setting of at least 1024 x 768 is recommended).

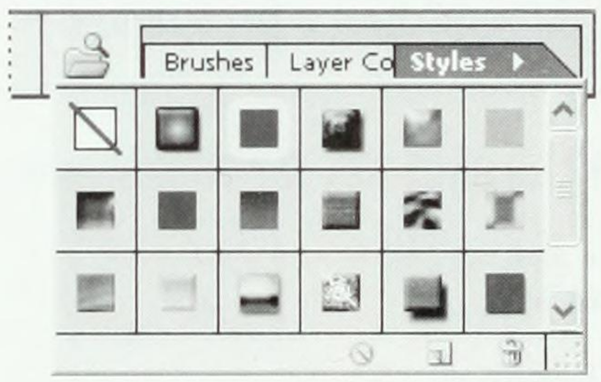
To dock palettes in the palette well:

Drag the palette's tab into the palette well so that the palette well is highlighted.

Docking a palette in the palette well

To use a palette in the palette well:

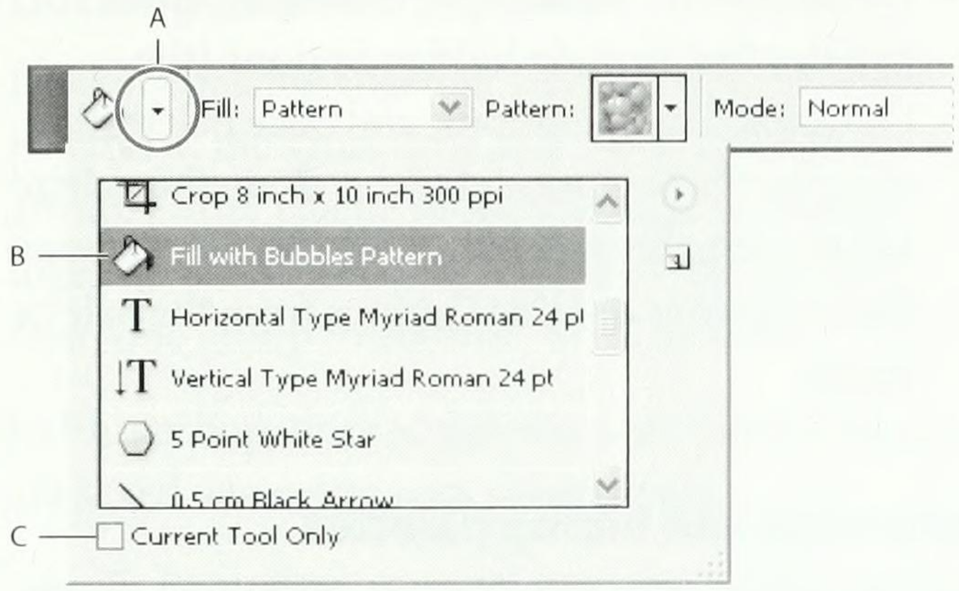
Click the palette's tab. The palette remains open until you click outside it or click in the palette's tab.



Docked palette in the palette well

Using tool presets (Photoshop)

You can load, edit, and create libraries of tool presets using the Tool Preset picker in the options bar, the Tool Presets palette, and the Preset Manager. You can also save and reuse tool settings using tool presets.



Viewing the Tool Preset picker
A. *Click the Tool Preset picker in the options bar to show the Tool Preset pop-up palette.* ***B.*** *Select a preset to change the tool's options to the preset settings, which will apply each time you select the tool (until you choose Reset Tool from the palette menu).* ***C.*** *Uncheck to show all tool presets; check to show presets for only the tool selected in the toolbox.*

To create a tool preset:

1 Choose a tool, and set the options you want to save as a tool preset in the options bar.

2 Click the Tool Preset button on the left side of the options bar, or choose Window > Tool Presets to display the Tool Presets palette.

3 Do one of the following:

- Click the Create New Tool Preset button.
- Choose New Tool Preset from the palette menu.

4 Enter a name for the tool preset, and click OK.

To choose a tool preset:

Do one of the following:

- Click the Tool Preset picker in the options bar, and select a preset from the pop-up palette.
- Choose Window > Tool Presets, and select a preset.

To change the list of presets in the Tool Preset pop-up palette:

Do one of the following:

- To show all loaded presets, choose Show All Tool Presets from the palette menu.
- To sort the presets by tool, choose Sort By Tool from the palette menu.
- To show only the loaded presets for the active tool, choose Show Current Tool Presets from the palette menu, or click the Current Tool Only button.
- To create, load, and manage libraries of tool presets, see "Using pop-up palettes" on page 16 and "Managing libraries with the Preset Manager (Photoshop)" on page 43.
- To change the display of presets in the pop-up palette, choose Text Only, Small Text, or Large Text from the palette menu.

Using palettes

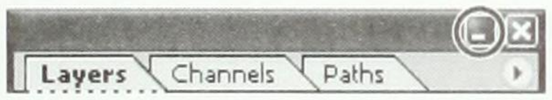
Palettes help you monitor and modify images. You can choose which palettes are visible. By default, palettes appear stacked together in groups. You can move palette groups, rearrange palettes in their groups, and remove palettes from groups.

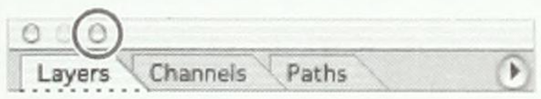
Palettes can also be docked (see "Docking palettes together" on page 15) to keep them organized.

Tips for rearranging the palette display

You can rearrange your palettes to make better use of your work area using the following techniques:

- To make a palette appear at the front of its group, click the palette's tab, or choose the palette name from the Window menu.
- To move an entire palette group, drag its title bar.
- To rearrange or separate a palette group, drag a palette's tab. Dragging a palette outside of an existing group creates a new group.
- To move a palette to another group, drag the palette's tab to that group.
- To display a palette menu, position the pointer on the triangle in the upper right corner of the palette, and press the mouse button.
- To change the size of a palette, drag any corner of the palette (Windows) or drag the size box at its lower right corner (Mac OS). Not all palettes can be resized.
- To collapse a group to palette titles only, click the Minimize/Maximize box (Windows) or the Zoom box (Mac OS), or double-click a palette's tab. You can still access the menu of a collapsed palette.

A 

B 

Click to collapse or expand palette.
A. *Windows* ***B.*** *Mac OS*

- (ImageReady) To show or hide options for palettes that include hidden options (the Optimize, Layer Options, and Slice palettes), click the Show Options button ⬍ on the palette tab to cycle through palette displays, or choose Show Options or Hide Options from the palette menu.

Showing and hiding palettes

Sometimes palettes take up too much screen space when you're working on large images. You can easily hide them to give you more room.

To show or hide palettes:

Do one of the following:

- To show a hidden palette, choose the palette name in the Window menu (palette names marked with a check are showing in the work area). If the palette you chose was docked with other palettes, the docked group will display.
- To hide a palette, choose the palette name in the Windows menu.
- To minimize a palette, click the Minimize button.
- To show or hide all open palettes, the options bar, and the toolbox, press Tab.
- To show or hide all palettes, press Shift+Tab.

Docking palettes together

Docking palettes together lets you view multiple palettes at the same time and move them as a group. Entire palette groups cannot be docked together at once, but you can dock the palettes from one group to another, one at a time.

In Photoshop, docked palettes and their locations are saved when you save a workspace.

In Photoshop, you can also store palettes in the palette well of the tool options bar. (See "Using the options bar" on page 11.)

To dock palettes together:

Drag a palette's tab to the bottom of another palette so that the bottom of the target palette is highlighted. To move an entire docked group, drag its title bar.

Saving workspaces

The positions of all open palettes and movable dialog boxes are saved when you exit the application. By saving a screen layout as a workspace, you'll be able to return to it, even if you move a palette or close the toolbox. Saved workspaces also work with the File Browser, allowing you to save your preferred File Browser setup.

You can assign keyboard shortcuts to each workspace so you can then flip through them using the keyboard (see "Customizing keyboard shortcuts" on page 45).

To save the current workspace layout:

1 Choose Window > Workspace > Save Workspace.

2 Enter a name for the workspace, and click OK.

To choose a workspace:

Choose Window > Workspace, and choose a workspace from the submenu.

To delete a workspace:

1 Choose Window > Workspace > Delete Workspace.

2 Select the workspace you want to delete, and click Delete.

To reset palettes to the default positions:

Choose Window > Workspace > Reset Palette Locations.

To save palette locations:

Do one of the following:

- In Windows, choose Edit > Preferences > General, and then select Save Palette Locations.
- (Photoshop) In Mac OS, choose Photoshop > Preferences > General, and then select Save Palette Locations.
- (ImageReady) In Mac OS, choose ImageReady > Preferences > General, and then select Save Palette Locations.

To always start with the default palette and dialog box positions:

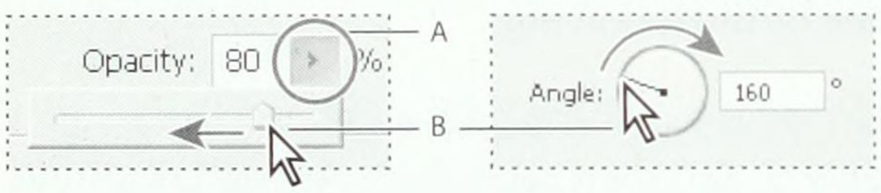
1 Do one of the following:

- In Windows, choose Edit > Preferences > General.
- (Photoshop) In Mac OS, choose Photoshop > Preferences > General.
- (ImageReady) In Mac OS, choose ImageReady > Preferences > General.

2 Deselect Save Palette Locations. The change takes effect the next time you start the application.

Using pop-up sliders

A number of palettes and dialog boxes contain settings that use pop-up sliders (for example, the Opacity option in the Layers palette). Pop-up sliders give you a lot of control over options. Often a text box accompanies the pop-up slider, so you can type in a specific value.



Using different kinds of pop-up sliders
***A.** Click to open pop-up slider box. **B.** Drag slider or angle radius.*

You can also "scrub" on pop-up sliders in several palettes. For example, if you hold the pointer over the word "Fill" or "Opacity" in the Layers palette, the pointer changes to the hand icon . Then you can move the pointer left or right to change the fill or opacity percentage.

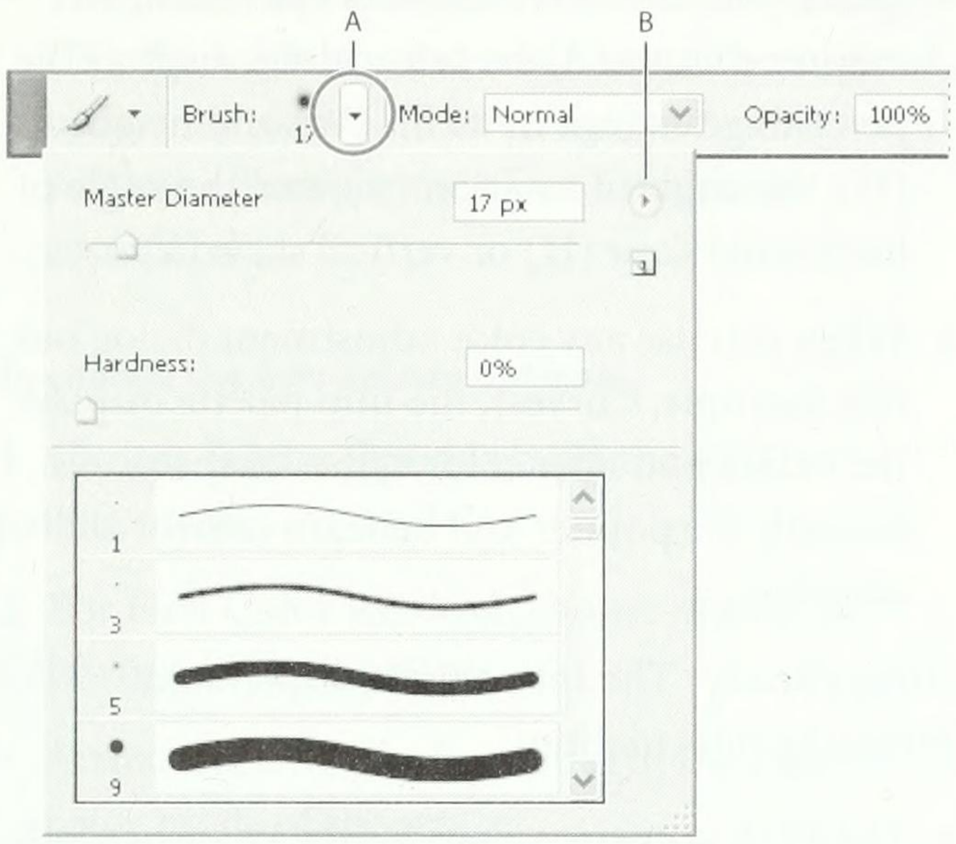
To use a pop-up slider:

Click the triangle next to the setting to open the pop-up slider box, and drag the slider or angle radius to the desired value. Click outside the slider box or press Enter or Return to close the slider box. To cancel changes, press the Escape key (Esc).

To increase or decrease values in 10% increments when the pop-up slider box is open, hold down Shift and press the Up Arrow or Down Arrow key.

Using pop-up palettes

Pop-up palettes provide easy access to available options for brushes, swatches, gradients, styles, patterns, contours, and shapes. You can customize pop-up palettes by renaming and deleting items and by loading, saving, and replacing libraries. You can also change the display of a pop-up palette to view items by their names, as thumbnail icons, or with both names and icons.



Viewing the Brush pop-up palette in the options bar
***A.** Click to open the pop-up palette.* ***B.** Click to view the pop-up palette menu.*

To select an item in a pop-up palette:

1 Click the thumbnail image in the options bar.

2 Click an item in the pop-up palette.

To rename an item in a pop-up palette:

Select an item, click the triangle in the upper right corner of the pop-up palette, and choose the Rename command from the palette menu. Enter a new name.

To delete an item in a pop-up palette:

Do one of the following:

- Select an item, click the triangle in the upper right corner of the pop-up palette, and choose the Delete command from the palette menu.
- Hold down Alt (Windows) or Option (Mac OS) and click an item.

To customize the list of items in a pop-up palette:

1 Click the triangle in the upper right corner of the pop-up palette to view the palette menu.

2 To return to the default library, choose the Reset command. You can either replace the current list or append the default library to the current list.

3 To load a different library, do one of the following:

- Choose the Load command to add a library to the current list. Then select the library file you want to use, and click Load.
- Choose the Replace command to replace the current list with a different library. Then select the library file you want to use, and click Load.
- Choose a library file (displayed at the bottom of the palette menu). Then click OK to replace the current list, or click Append to append the current list.

4 To save the current list as a library for later use, choose the Save command. Then enter a name for the library file, and click Save.

(Mac OS) You can specify that a file extension is always appended to a library file by setting Append File Extension to Always in the File Handling Preferences. You should put the extension on a library filename so that you can easily share the libraries across operating systems.

To change the display of items in a pop-up palette:

1 Click the triangle in the upper right corner of the pop-up palette to view the palette menu.

2 Select a view option: Text Only, Small Thumbnail, Large Thumbnail, Small List, or Large List.

Using the Info palette

The Info palette displays information about the color values beneath the pointer and, depending on the tool in use, other useful measurements.

To display the Info palette:

Choose Window > Info.

The Info palette displays the following information:

- When displaying CMYK values, the Info palette displays an exclamation point next to the CMYK values if the color beneath the pointer or color sampler is out of the printable CMYK color gamut.
- When you use the Marquee tool, the Info palette displays the *x*- and *y*-coordinates of the pointer position and the width (W) and height (H) of the marquee as you drag.
- When you use the Crop tool or Zoom tool, the Info palette displays the width (W) and height (H) of the marquee as you drag. The palette also shows the angle of rotation of the crop marquee.
- When you use the Line tool, Pen tool, or Gradient tool or when you move a selection, the Info palette displays the *x*- and *y*-coordinates of your starting position, the change in X (DX), the change in Y (DY), the angle (A), and the distance (D) as you drag.
- When you use a two-dimensional transformation command, the Info palette displays the percentage change in width (W) and height (H), the angle of rotation (A), and the angle of horizontal skew (H) or vertical skew (V).
- When you use any color adjustment dialog box (for example, Curves), the Info palette displays the before and after color values of the pixels beneath the pointer and beneath color samplers.

(ImageReady) The Info palette displays the following information:

- The RGB numeric values for the color beneath the pointer.
- The Opacity value for the pixels beneath the pointer
- The hexadecimal value for the color beneath the pointer
- The index color table position for the color beneath the pointer
- The *x*- and *y*-coordinates of the pointer
- The *x*- and *y*-coordinates of your starting position (before you click in the image) and your ending position (as you drag in the image) when you use the Marquee tool, the shape tools, the Crop tool, and the Slice tool
- The width (W) and height (H) of the selection as you drag when you use the Crop tool, the shape tools, the Slice tool, or the Zoom tool

- The percentage change in width (W) and height (H), the angle of rotation (A), and the angle of horizontal skew (H) or vertical skew (V) when you use a Transform or Free Transform command

To change the Info palette options:

1 Choose Palette Options from the Info palette menu.

2 For First Color Readout, choose one of the following display options:

- Actual Color to display values in the current color mode of the image.
- Total Ink to display the total percentage of all CMYK ink at the pointer's current location, based on the values set in the CMYK Setup dialog box.
- Opacity to display the opacity of the current layer. This option does not apply to the background.
- Any other option to display the color values in that color mode.

3 For Second Color Readout, choose a display option listed in step 2.

4 For Ruler Units, choose a unit of measurement.

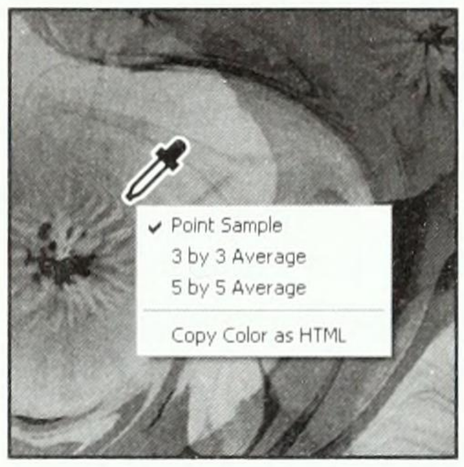
5 If you want to see values for 16-bit images, select Show 16 bit values.

6 Click OK.

To change measurement units, click the crosshair icon in the Info palette for a menu of options. To change color readout modes, click the eyedropper icon.

Using context menus

In addition to the menus at the top of your screen, context menus display commands relevant to the active tool, selection, or palette.



Viewing the context menu for using the Eyedropper tool

To display context menus:

1 Position the pointer over an image or palette item.

2 Click with the right mouse button (Windows) or Control-click (Mac OS). The context menu appears where you clicked.

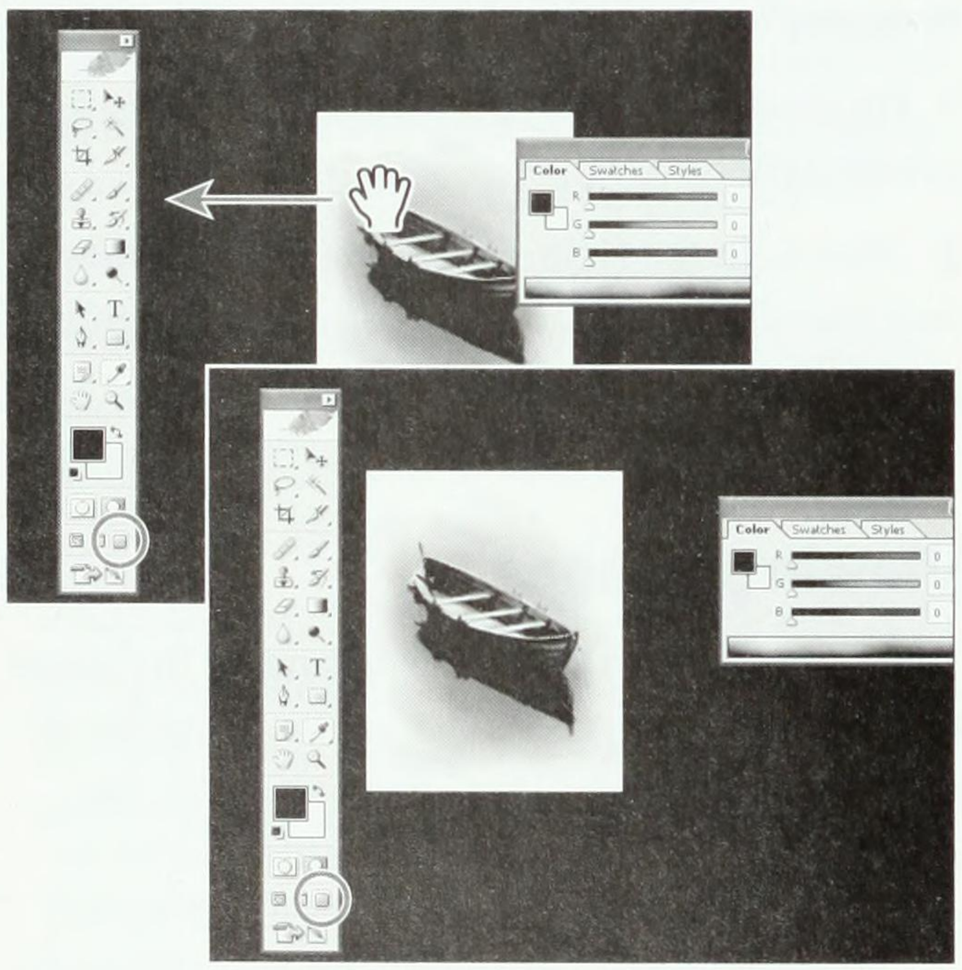
Viewing images

You can change the screen display mode to change the appearance of the Photoshop or ImageReady work area. The Hand tool, the zoom tools, the Zoom commands, and the Navigator palette let you view different areas of an image at different magnifications. You can open additional windows to display several views at once (such as different magnifications) of an image.

Changing the screen mode

You can use the screen mode options to view your images on your entire screen. You can show or hide the menu bar, title bar, and scroll bars. You can choose from the following:

- The Standard screen mode is the default view, with menu bars, scrolls bars, and other screen elements visible.
- Full Screen with Menu Bar view enlarges your view of an image but keeps the menu bar in view.
- Full Screen mode allows you to move the image around the screen to view different areas.



Dragging an image in Full Screen mode

To change the screen display mode:

Do one of the following:

- To display the default window, with the menu bar at the top and scroll bars on the side, choose View > Screen Mode > Standard, or click the Standard button in the toolbox.
- To display a full-screen window with a menu bar and a 50% gray background, but no title bar or scroll bars, choose View > Screen Mode > Full Screen with Menu Bar view, or click the Full Screen with Menu Bar button in the toolbox.
- To display a full-screen window with only a black background (no title bar, menu bar, or scroll bars), choose View > Screen Mode > Full Screen, or click the Full Screen button in the toolbox.

Viewing multiple images

The document window is where your images appear. You can open multiple windows to display different views of the same file. A list of open windows appears in the Window menu. Available memory may limit the number of windows per image.

In Photoshop, you can use the Hand tool's Scroll All Windows option to scroll through all open images. Select it in the options bar and drag in one image to scroll through all visible images.

In ImageReady, the document window allows you to switch easily between original and optimized views of an image using tabs, and to view the original image and multiple versions of an optimized image simultaneously.

To view other open images:

Choose the file name from the bottom of the Windows menu.

To open multiple views of the same image:

Do one of the following:

- Choose Window > Documents > New Window.
- (ImageReady) Drag any tab away from the document window.

To arrange multiple windows:

Do one of the following:

- Choose Window > Documents > Cascade to display windows stacked and cascading from the upper left to the lower right of the screen.
- Choose Window > Documents > Tile to display windows edge to edge.

To zoom in or out on multiple images (Photoshop):

1 Open one or more images, or copies of a single image.

2 Choose Window > Arrange > Tile to display the images edge to edge.

3 Select the Zoom tool, and then do one of the following:

- Select Zoom All Windows in the options bar, and then click in one of the images. The other images zoom in or out at the same magnification.
- Choose Window > Arrange > Match Zoom. Hold Shift and click on one of the images. The other images zoom in or out at the same magnification.

To match the location between images (Photoshop):

1 Open one or more images, or multiple copies of a single image.

2 Choose Window > Arrange > Tile.

3 Select the Hand tool, and then do one of the following:

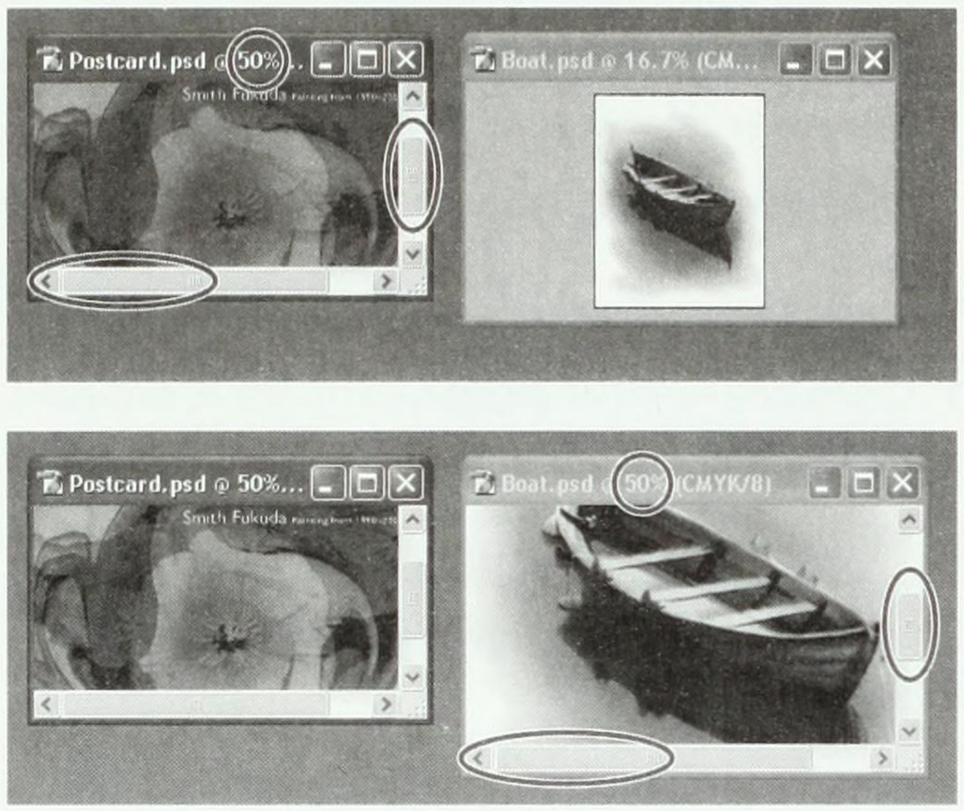
- Select Scroll All Windows in the options bar, and then click an area in one of the images. The other images snap to the corresponding area.
- Choose Window > Arrange > Match Location. Hold Shift and click an area of an image. The other images snap to the corresponding area.

To match the zoom and location between images (Photoshop):

1 Open one or more images, or multiple copies of a single image.

2 Choose Window > Arrange > Tile.

3 Choose Window > Arrange > Match Zoom and Location.



Without Match Zoom and Location (left), and after Match Zoom and Location selected (right)

4 Select the Zoom tool or the Hand tool.

5 Select one of the images, and then choose Window > Arrange > Match Zoom and Location.

6 Hold Shift and click an area of an image. The other images magnify to the same percentage, and snap to the corresponding area you clicked.

To close windows:

Choose a command:

- Choose File > Close to close the active window.
- Choose File > Close All to close all windows.

Navigating the view area

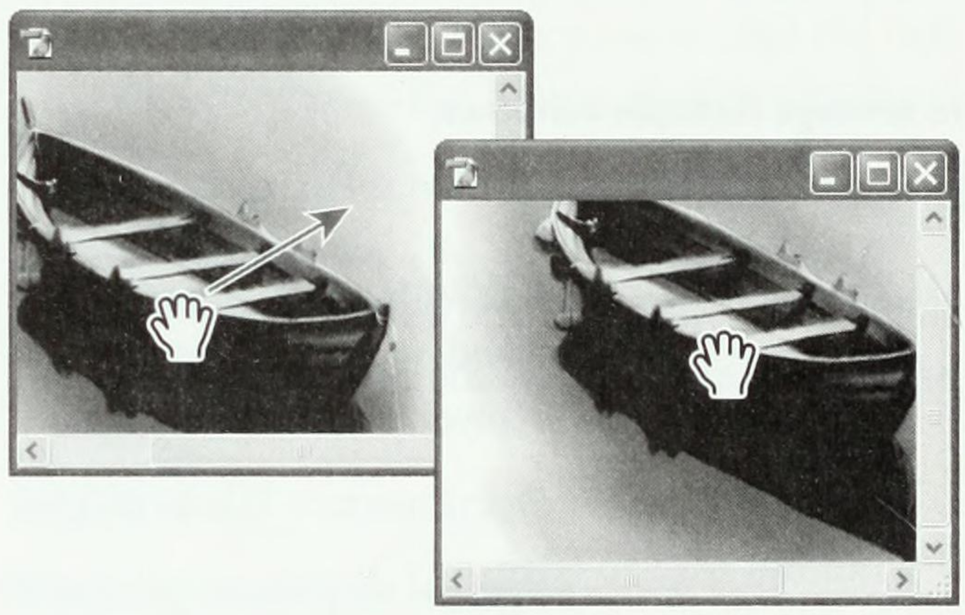
If the entire image is not visible in the document window, you can navigate to bring another area of the image into view.

In Photoshop, you can also use the Navigator palette to quickly change the view of an image.

To view another area of an image:

Do one of the following:

- Use the window scroll bars.
- Select the Hand tool and drag to pan over the image.



Dragging the Hand tool to view another area of an image

To use the Hand tool while another tool is selected, hold down the spacebar as you drag in the image.

To move the view of an image using the Navigator palette (Photoshop):

1 Choose Window > Navigator.

2 Do one of the following:

- Drag the view box in the thumbnail of the image, which represents the boundaries of the image window.
- Click in the thumbnail of the image. The new view includes the area you click.

To change the color of the Navigator palette view box (Photoshop):

1 Choose Palette Options from the Navigator palette menu.

2 Choose a color:

- To use a preset color, choose an option for Color.
- To specify a different color, click the color box, and choose a color.

Magnifying and reducing the view

You can magnify or reduce your view using various methods. The window's title bar displays the zoom percentage (unless the window is too small for the display to fit), as does the status bar at the bottom of the window.

Note: *The 100% view of an image displays an image as it will appear in a browser (based on the monitor resolution and the image resolution). (See "Understanding image size and resolution" on page 50.)*

To zoom in:

Do one of the following:

- Select the Zoom tool. The pointer becomes a magnifying glass with a plus sign in its center. Click the area you want to magnify. Each click magnifies the image to the next preset percentage, centering the display around the point you click. When the image has reached its maximum magnification level of 1600%, the magnifying glass appears empty.
- (Photoshop) Click the Zoom In button in the options bar to magnify to the next preset percentage. When the image has reached its maximum magnification level, the command is dimmed.
- Choose View > Zoom In to magnify to the next preset percentage. When the image has reached its maximum magnification level, the command is dimmed.
- (Photoshop) Enter a magnification level in the Zoom text box at the lower left of the window.
- (ImageReady) Click the Zoom Level pop-up menu at the bottom left of the document window, and choose a zoom level.

To zoom out:

Do one of the following:

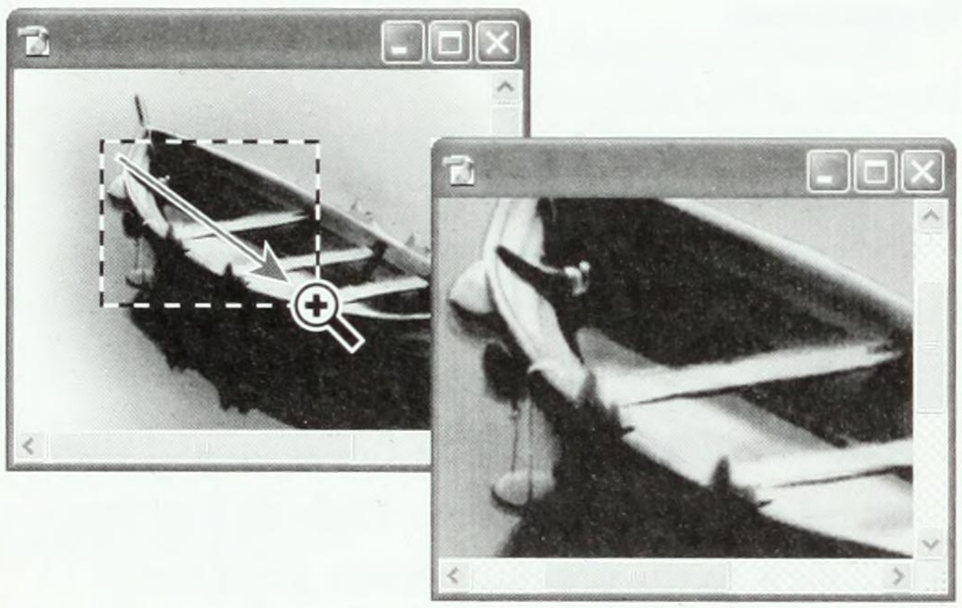
- Select the Zoom tool. Hold down Alt (Windows) or Option (Mac OS) to activate the Zoom Out tool. The pointer becomes a magnifying glass with a minus sign in its center. Click the center of the area of the image you want to reduce. Each click reduces the view to the previous preset percentage. When the file has reached its maximum reduction level, the magnifying glass appears empty.
- Click the Zoom Out button in the options bar to reduce to the previous preset percentage. When the image has reached its maximum reduction level, the command is dimmed.

- Choose View > Zoom Out to reduce to the previous preset percentage. When the image reaches its maximum reduction level, the command is dimmed.
- (Photoshop) Enter a reduction level in the Zoom text box at the lower left of the window.
- (ImageReady) Click the Zoom Level pop-up menu at the lower left of the document window, and choose a zoom level.

To magnify by dragging:

1 Select the Zoom tool.

2 Drag over the part of the image you want to magnify.



Dragging the Zoom tool to magnify the view of an image

The area inside the zoom marquee is displayed at the highest possible magnification. To move the marquee around the artwork in Photoshop, begin dragging a marquee and then hold down the spacebar while dragging the marquee to a new location.

To display an image at 100%:

Do one of the following:

- Double-click the Zoom tool.
- Choose View > Actual Pixels (Photoshop) or View > Actual Size (ImageReady).

To change the view to fit the screen:

Do one of the following:

- Double-click the Hand tool.
- Choose View > Fit on Screen.

These options scale both the zoom level and the window size to fit the available screen space.

To automatically resize the window when magnifying or reducing the view:

With the Zoom tool active, select Resize Windows to Fit in the options bar. The window resizes when you magnify or reduce the view of the image.

When Resize Windows to Fit is deselected (the default), the window maintains a constant size regardless of the image's magnification. This can be helpful when using smaller monitors or working with tiled views.

To automatically resize the window when zooming in or out using keyboard shortcuts (Photoshop):

1 Do one of the following:

- In Windows, choose Edit > Preferences > General.
- In Mac OS, choose Photoshop > Preferences > General.

2 Select Keyboard Zoom Resizes Windows.

Correcting mistakes

Most operations can be undone if you make a mistake. Alternatively, you can restore all or part of an image to its last saved version. But available memory may limit your ability to use these options.

For information on how to restore your image to how it looked at any point in the current work session, see "About the History palette" on page 26.

To undo the last operation:

Choose Edit > Undo.

If an operation can't be undone, the command is dimmed and changes to Can't Undo.

To redo the last operation:

Choose Edit > Redo.

You can set the Redo keystroke preference to be the same for Photoshop and ImageReady. In the General area of the Preferences dialog box, select a preference for the Redo key. You can also set the key to toggle between Undo and Redo.

To free memory used by the Undo command, the History palette, or the Clipboard (Photoshop):

Choose Edit > Purge, and choose the item type or buffer you want to clear. If already empty, the item type or buffer is dimmed.

Important: *The Purge command permanently clears from memory the operation stored by the command or buffer; it cannot be undone. For example, choosing Edit > Purge > Histories deletes all history states from the History palette. Use the Purge command when the amount of information held in memory is so large that Photoshop's performance is noticeably diminished.*

To revert to the last saved version:

Choose File > Revert.

Note: *Revert is added as a history state in the History palette and can be undone.*

To restore part of an image to its previously saved version (Photoshop):

Do one of the following:

- Use the History Brush tool to paint with the selected state or snapshot on the History palette. (See "Painting with a state or snapshot of an image (Photoshop)" on page 29.)
- Use the Eraser tool with the Erase to History option selected. (See "Using the Eraser tool" on page 171.)
- Select the area you want to restore, and choose Edit > Fill. For Use, choose History, and click OK. (See "Filling and stroking selections and layers" on page 176.)

Note: *To restore the image with a snapshot of the initial state of the document, choose History Options from the Palette menu and make sure that the Automatically Create First Snapshot option is on.*

About the History palette

The History palette lets you jump to any recent state of the image created during the current working session. Each time you apply a change to an image, the new state of that image is added to the palette.

For example, if you select, paint, and rotate part of an image, each of those states is listed separately in the palette. You can then select any of the states, and the image will revert to how it looked when that change was first applied. You can then work from that state.

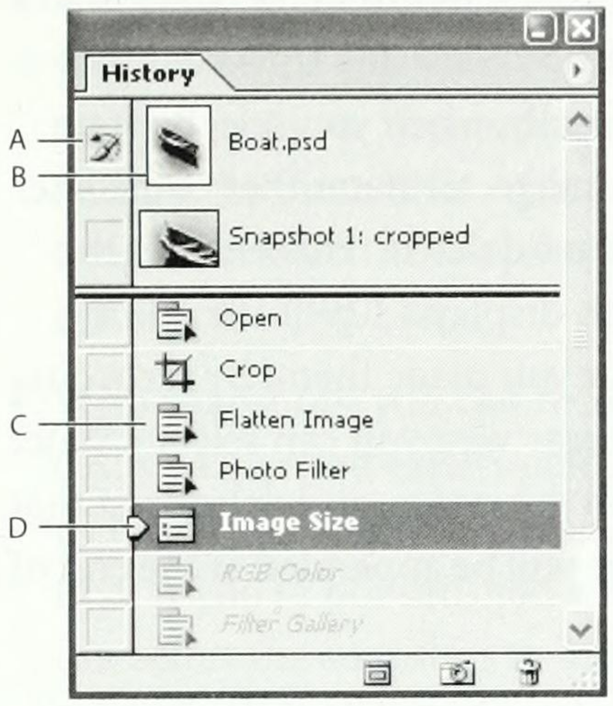
Tips for using the History palette

Note the following guidelines when using the History palette:

- Program-wide changes, such as changes to palettes, color settings, actions, and preferences, are not changes to a particular image and so are not added to the History palette.
- By default, the History palette lists the previous 20 states (Photoshop), or 32 states (ImageReady). You can always change the number of states in Preferences. Older states are automatically deleted to free more memory for Photoshop. To keep a particular state throughout your work session, make a snapshot of the state. For more information, see "Making a snapshot of an image (Photoshop)" on page 28.
- Once you close and reopen the document, all states and snapshots from the last working session are cleared from the palette.
- By default, a snapshot of the initial state of the document is displayed at the top of the palette.
- States are added from the top down. That is, the oldest state is at the top of the list, the most recent one at the bottom.
- Each state is listed with the name of the tool or command used to change the image.
- By default, selecting a state dims those below. This way you can easily see which changes will be discarded if you continue working from the selected state. For information on customizing the history options, see "Setting history options (Photoshop)" on page 28.
- By default, selecting a state and then changing the image eliminates all states that come after.
- If you select a state and then change the image, eliminating the states that came after, you can use the Undo command to undo the last change and restore the eliminated states.
- By default, deleting a state deletes that state and those that came after it. If you choose the Allow Non-Linear History option, deleting a state deletes just that state. For more information, see "Setting history options (Photoshop)" on page 28.

Using the History palette

You can use the History palette to revert to a previous state of an image, to delete an image's states, and (in Photoshop) to create a document from a state or snapshot.



Photoshop History palette
A. *Sets the source for the history brush* ***B.*** *Thumbnail of a snapshot* ***C.*** *History state* ***D.*** *History state slider*

To display the History palette:

Choose Window > History, or click the History palette tab.

To revert to a previous state of an image:

Do any of the following:

- Click the name of the state.
- Drag the slider at the left of the state up or down to a different state.
- (Photoshop) Choose Step Forward or Step Backward from the palette menu or the Edit menu to move to the next or previous state.

To delete one or more states of the image (Photoshop):

Do one of the following:

- Click the name of the state, and choose Delete from the History palette menu to delete that change and those that came after it.
- Drag the state to the Trash button to delete that change and those that came after it.
- Choose Clear History from the palette menu to delete the list of states from the History palette, without changing the image. This option doesn't reduce the amount of memory used by Photoshop.
- Hold down Alt (Windows) or Option (Mac OS), and choose Clear History from the palette menu to purge the list of states from the History palette without changing the image. If you get a message that Photoshop is low on memory, purging states is useful, since the command deletes the states from the Undo buffer and frees up memory. You can't undo the Clear History command.
- Choose Edit > Purge > Histories to purge the list of states from the History palette for all open documents. You can't undo this action.

To delete all of an image's states (ImageReady):

Choose Clear Undo/Redo History from the History palette menu.

Important: *This action cannot be undone.*

To create a new document from the selected state or snapshot of the image (Photoshop):

Do one of the following:

- Drag a state or snapshot onto the New Document button .
- Select a state or snapshot, and click the New Document button.
- Select a state or snapshot, and choose New Document from the History palette menu.

The history list for the newly created document will be empty.

To save one or more snapshots or image states for use in a later editing session, create a new file for each state you save, and save each in a separate file. When you reopen your original file, plan to open the other saved files also. You can drag each file's initial snapshot to the original image and thus access the snapshots again from the original image's History palette.

To replace an existing document with a selected state (Photoshop):

Drag the state onto the document.

Setting history options (Photoshop)

You can specify the maximum number of items to include in the History palette and set other options that customize the way you work with the palette.

To set history options:

1 Choose History Options from the History palette menu.

2 Select an option:

- Automatically Create First Snapshot to automatically create a snapshot of the initial state of the image when the document is opened.
- Automatically Create New Snapshot When Saving to generate a snapshot every time you save.
- Allow Non-Linear History to make changes to a selected state without deleting the states that come after. Normally, when you select a state and change the image, all states that come after the selected one are deleted. This enables the History palette to display a list of the editing steps in the order you made them. By recording states in a nonlinear way, you can select a state, make a change to the image, and delete just that state. The change will be appended at the end of the list.
- Show New Snapshot Dialog By Default to force Photoshop to prompt you for snapshot names even when using the buttons on the palette.

Making a snapshot of an image (Photoshop)

The Snapshot command lets you make a temporary copy (or *snapshot*) of any state of the image. The new snapshot is added to the list of snapshots at the top of the History palette. Selecting a snapshot lets you work from that version of the image.

Snapshots are similar to the states listed in the History palette, but they offer additional advantages:

- You can name a snapshot to make it easy to identify.
- Snapshots can be stored for an entire work session.

- You can compare effects easily. For example, you can take a snapshot before and after applying a filter. Then select the first snapshot, and try the same filter with different settings. Switch between the snapshots to find the settings you like best.
- With snapshots, you can recover your work easily. When you experiment with a complex technique or apply an action, take a snapshot first. If you're not satisfied with the results, you can select the snapshot to undo all the steps.

Important: *Snapshots are not saved with the image—closing an image deletes its snapshots. Also, unless you select the Allow Non-Linear History option, selecting a snapshot and changing the image deletes all of the states currently listed in the History palette.*

To create a snapshot:

1 Select a state.

2 To automatically create a snapshot, click the New Snapshot button on the History palette, or if Automatically Create New Snapshot When Saving is selected in the history options, choose New Snapshot from the History palette menu.

3 To set options when creating a snapshot, choose New Snapshot from the History palette menu, or Alt-click (Windows) or Option-click (Mac OS) the New Snapshot button.

4 Enter the name of the Snapshot in the Name text box.

5 For From, select the snapshot contents:

- Full Document to make a snapshot of all layers in the image at that state
- Merged Layers to make a snapshot that merges all layers in the image at that state
- Current Layer to make a snapshot of only the currently selected layer at that state

To select a snapshot:

Do any of the following:

- Click the name of the snapshot.
- Drag the slider at the left of the snapshot up or down to a different snapshot.

To rename a snapshot:

Double-click the snapshot and enter a name.

To delete a snapshot:

Do one of the following:

- Select the snapshot, and choose Delete from the palette menu.
- Select the snapshot, and click the Trash button.
- Drag the snapshot to the Trash button.

Painting with a state or snapshot of an image (Photoshop)

The History Brush tool lets you paint a copy of one state or snapshot of an image into the current image window. This tool makes a copy, or sample, of the image and then paints with it.

For example, you might make a snapshot of a change you made with a painting tool or filter (with the Full Document option selected when you create the snapshot). After undoing the change to the image, you could use the History Brush tool to apply the change selectively to areas of the image. Unless you select a merged snapshot, the History Brush tool paints from a layer in the selected state to the same layer in another state.

The History Brush tool copies from one state or snapshot to another, but only at the same location. In Photoshop, you can also paint with the art history brush to create special effects. (See "Using the Art History Brush tool (Photoshop)" on page 166.)

To paint with a state or snapshot of an image:

1 Select the History Brush tool .

2 Do one of the following in the options bar:

- Specify the opacity and blending mode. (See "Setting options for painting and editing tools" on page 171.)
- Choose a brush and set brush options. (See "Working with brushes" on page 167.)

3 In the History palette, click the left column of the state or snapshot to use as the source for the History Brush tool.

4 Drag to paint with the History Brush tool.

Working with the Edit History Log

If you need to keep careful track of what's been done to a file in Photoshop, either for your own records, client records, or legal purposes, the Edit History Log keeps a textual history of what has been done to an image. You can view the Edit History Log metadata using the File Browser or the File Info dialog box (see "Adding metadata to files" on page 88).

You can choose to export the text either in an external log file, or you can store the information in the metadata of edited files. Logging many editing operations into a file's metadata can increase file size and slow the opening and saving of the file.

If you need to be able to prove that the log file hasn't been tampered with, keep the edit log in the file's metadata, and then use Adobe Acrobat to digitally sign the log file.

To set Edit History Log options:

1 In Windows, choose Edit > Preferences > General. In Mac OS, choose Photoshop > Preferences > General.

2 In the History Log Options pane, choose one of the following options:

- Metadata to store entries in the metadata of each image.
- Text File to export the text into an external file. You'll be prompted to name the log file and choose the location on your computer where you want to store the file.
- Both to store metadata in the file, and create a text file.

3 From the Edit Log items pop-up menu, choose one of the following options:

- Sessions to include entries for each time Photoshop is launched or exited, and each time files are opened and closed (each image's file name is included).
- Concise to include the text that appears in the history palette in addition to the Sessions information.
- Detailed to include the text that appears in the actions palette in addition to the Concise information. Choose Detailed if you need to keep a complete history of what has been done to files.
- None to turn off the log.

To save the Edit History Log:

1 In Windows, choose Edit > Preferences > General. In Mac OS, choose Photoshop > Preferences > General.

2 In the History Log Options pane, click the Choose button.

3 Choose the location where you want to save the log, and then click OK.

Duplicating images

You can duplicate an entire image (including all layers, layer masks, and channels) into available memory without saving to disk. In ImageReady, you can also duplicate optimized versions of an image.

Using duplicates in ImageReady lets you experiment and then compare several versions of the optimized image to the original.

To duplicate an image (Photoshop):

1 Open the image you want to duplicate.

2 Choose Image > Duplicate.

3 Enter a name for the duplicated image.

4 If you want to duplicate the image without merging the layers, select Duplicate Merged Layers Only.

5 Click OK.

To duplicate an image in Photoshop and automatically append the name "copy" to its filename, hold down Alt (Windows) or Option (Mac OS) when you choose Image > Duplicate.

To duplicate an original image (ImageReady):

1 Open the image you want to duplicate.

2 Select the Original tab at the top of the image window.

3 Hold down Alt (Windows) or Option (Mac OS), and drag the Original tab from the image window, or choose Image > Duplicate.

4 Name the duplicate, specify whether to flatten the layers, and click OK.

To duplicate an optimized image (ImageReady):

1 Open the image you want to duplicate.

2 Select the Optimized tab at the top of the image window.

3 Hold down Alt (Windows) or Option (Mac OS), and drag the Optimized tab from the image window, or choose Image > Duplicate Optimized.

4 Name the duplicate, and click OK.

Note: When you duplicate an image in Optimized, 2-Up, or 4-Up view, the duplicate image appears in the Original view in the duplicate image window. If you want a duplicate optimized image to appear in the Optimized, 2-Up, or 4-Up view, duplicate the original image, and then select the Optimized, 2-Up, or 4-Up tab in the duplicate image window.

Using rulers, columns, the Measure tool, guides, and the grid

Rulers, columns, the Measure tool, guides, and the grid help you position images or elements precisely across the width or length of an image.

Note: You can also align and distribute parts of an image using the Layers palette. (See "Aligning layers" on page 200.)

Using rulers

When visible, rulers appear along the top and left side of the active window. Markers in the ruler display the pointer's position when you move it. Changing the ruler origin (the (0, 0) mark on the top and left rulers) lets you measure from a specific point on the image. The ruler origin also determines the grid's point of origin.

To display or hide rulers:

Choose View > Rulers.

To change the rulers' zero origin:

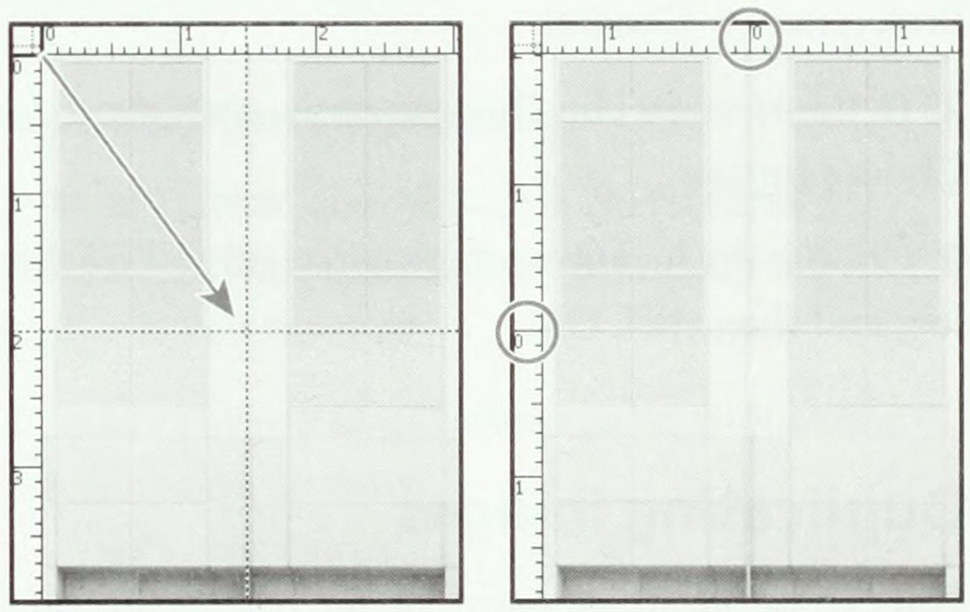
1 To snap the ruler origin to guides, slices, or Document bounds, choose View > Snap To, then choose any combination of options from the submenu. (See "Using the Snap command" on page 124.)

(Photoshop) You can also snap to a grid in addition to guides, slices, and Document bounds.

2 Position the pointer over the intersection of the rulers in the upper left corner of the window, and drag diagonally down onto the image. A set of cross hairs appears, marking the new origin on the rulers.

To make the ruler origin snap to the ruler ticks (Photoshop), hold down Shift as you drag.

Note: To reset the ruler origin to its default value, double-click the upper left corner of the rulers.



Dragging to create new ruler origin and result

To change the rulers' settings (Photoshop):

1 Do one of the following:

- Double-click a ruler.
- In Windows, choose Edit > Preferences > Units & Rulers.
- In Windows, right-click the ruler and then choose a new unit from the context menu.
- In Mac OS, choose Photoshop > Preferences > Units & Rulers.

2 For Rulers, choose a unit of measurement.

Note: *Changing the units on the Info palette automatically changes the units on the rulers.*

3 For Point/Pica Size, choose from the following options:

- PostScript (72 points per inch) if you are printing to a PostScript device.
- Traditional to use printer's 72.27 points per inch.

4 Click OK.

Using columns (Photoshop)

The New, Image Size, and Canvas Size commands let you specify image width in terms of columns. Using columns is convenient when you plan to import an image into a page layout program, such as Adobe InDesign®, and you want the image to fit exactly within a certain number of columns.

To specify columns for an image:

1 Do one of the following:

- In Windows, choose Edit > Preferences > Units & Rulers.
- In Mac OS, choose Photoshop > Preferences > Units & Rulers.

2 Enter values for Width and Gutter.

Using the Measure tool (Photoshop)

The Measure tool calculates the distance between any two points in the work area. When you measure from one point to another, a nonprinting line is drawn and the options bar and Info palette show the following information:

- The starting location (X and Y)
- The horizontal (W) and vertical (H) distances traveled from the *x*- and *y*-axes
- The angle measured relative to the axis (A)
- The total distance traveled (D1)
- The two distances traveled (D1 and D2), when you use a protractor

All measurements except the angle are calculated in the unit of measure currently set in the Units & Rulers preference dialog box. For information on setting the unit of measure, see "Using rulers" on page 32.

To display an existing measuring line:

Select the Measure tool .

To measure between two points:

1 Select the Measure tool .

2 Drag from the starting point to the ending point. Hold down the Shift key to constrain the tool to multiples of 45°.

3 To create a protractor from an existing measuring line, Alt-drag (Windows) or Option-drag (Mac OS) at an angle from one end of the measuring line, or double-click the line and drag. Hold down the Shift key to constrain the tool to multiples of 45°.

To edit a measuring line or protractor:

1 Select the Measure tool .

2 Do one of the following:

- To resize the line, drag one end of an existing measuring line.
- To move the line, place the pointer on the line away from either endpoint, and drag the line.
- To remove the line, place the pointer on the line away from either endpoint, and drag the line out of the image.

Note: *You can drag out a measure line on an image feature that should be horizontal or vertical, and then choose Image > Rotate Canvas > Arbitrary. The correct angle of rotation required to straighten the image will already be entered into the Rotate Canvas dialog box.*

Using guides and the grid

Guides appear as lines that float over the entire image and do not print. You can move, remove, or lock a guide to avoid accidentally moving it.

The grid is useful for laying out elements symmetrically. The grid appears by default as nonprinting lines but can also be displayed as dots.

Guides and grids behave in similar ways:

- Selections, selection borders, and tools snap to a guide or the grid when dragged within 8 screen (not image) pixels. Guides also snap to the grid when moved. You can turn this feature on and off.
- Guide spacing, along with guide and grid visibility and snapping, is specific to an image.
- Grid spacing, along with guide and grid color and style, is the same for all images.

In ImageReady, you can use Smart Guides to help align shapes, slices, and selections. They appear automatically when you draw a shape, or create a selection or slide. You can hide Smart Guides if you need to.

To show or hide a grid or guides:

Do one of the following:

- (Photoshop) Choose View > Show > Grid.
- Choose View > Show > Guides.
- Choose View > Extras. This command also shows or hides (Photoshop) selection edges, target path, slices, and notes, or (ImageReady) selection edges, slices, image maps, text bounds, text baseline, and text selection. (See "Working with Extras" on page 36.)

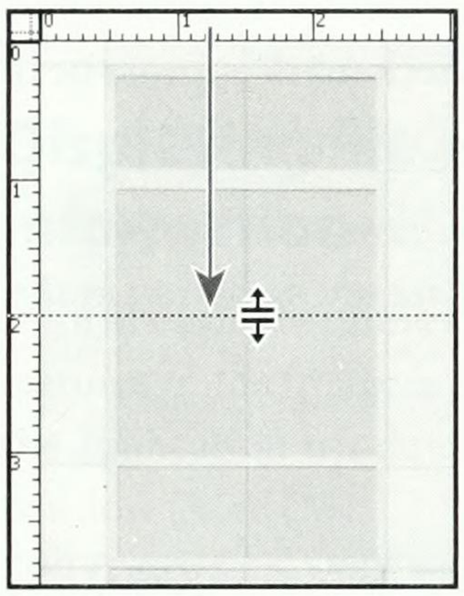
To place a guide:

1 If the rulers are not visible, choose View > Rulers.

Note: *For the most accurate readings, view the image at 100% magnification or use the Info palette.*

2 Create a guide:

- (Photoshop) Choose View > New Guide. In the dialog box, select Horizontal or Vertical orientation, enter a position, and click OK.
- (ImageReady) Choose View > Create Guides. In the dialog box, specify guide options and click OK.
- Drag from the horizontal ruler to create a horizontal guide.



Dragging to create a horizontal guide

- Hold down Alt (Windows) or Option (Mac OS), and drag from the vertical ruler to create a horizontal guide.
- Drag from the vertical ruler to create a vertical guide.
- Hold down Alt (Windows) or Option (Mac OS), and drag from the horizontal ruler to create a vertical guide.
- (Photoshop) Hold down Shift and drag from the horizontal or vertical ruler to create a guide that snaps to the ruler ticks.

The pointer changes to a double-headed arrow ⇿ when you drag a guide.

To move a guide:

1 Select the Move tool , or hold down Ctrl (Windows) or Command (Mac OS) to activate the Move tool. (This option does not work with the Hand tool or the Slice tool .)

2 Position the pointer over the guide (the pointer turns into a double-headed arrow).

3 Move the guide in any of the following ways:

- Drag the guide to move it.
- Change the guide from horizontal to vertical, or vice versa, by holding down Alt (Windows) or Option (Mac OS) as you click or drag the guide.
- (Photoshop) Align the guide with the ruler ticks by holding down Shift as you drag the guide. The guide will snap to the grid if the grid is visible and View > Snap To > Grid is selected.

To lock all guides:

Choose View > Lock Guides.

To remove guides from the image:

Do one of the following:

- To remove a single guide, drag the guide outside the image window.
- To remove all guides, choose View > Clear Guides.

To hide Smart Guides (ImageReady):

View > Show > Smart Guides.

To turn snapping to guides on or off:

Choose View > Snap To > Guides. (See "Using the Snap command" on page 124.)

To turn snapping to the grid on or off:

Choose View > Snap To > Grid. (See "Using the Snap command" on page 124.)

To set guide and grid preferences (Photoshop):

1 Do one of the following:

- In Windows, choose Edit > Preferences > Guides, Grid, & Slices.
- In Mac OS, choose Photoshop > Preferences > Guides, Grid, & Slices.

2 For Color, choose a color for the guides, the grid, or both. If you choose Custom, click the color box, choose a color, and click OK. (See "Using the Color palette" on page 181.)

3 For Style, choose a display option for guides or the grid, or both.

4 For Gridline Every, enter a value for the grid spacing. For Subdivisions, enter a value to subdivide the grid.
If desired, change the units for this option.
The Percent option creates a grid that divides the image into even sections. For example, choosing 25 for the Percent option creates an evenly divided 4-by-4 grid.

5 Click OK.

Working with Extras

Guides, grid, target paths, selection edges, slices, image maps, text bounds, text baselines, text selections, and annotations are nonprinting *Extras* that help you select, move, or edit images and objects. You can turn on or off an Extra or any combination of Extras without affecting the image. You can also show or hide Extras by choosing the Extras command in the View menu.

To show Extras:

Choose View > Extras. A check mark appears next to all shown Extras in the Show submenu.

Note: *Choosing Extras also shows color samplers, even though color samplers are not an option in the Show submenu.*

To hide Extras:

With Extras showing, choose View > Extras. A dot (Windows) or a dash (Mac OS) appears next to all hidden Extras in the Show submenu.

Note: *Hiding only suppresses the display of Extras. It does not turn off these options.*

To show one Extra from a list of hidden Extras:

Choose View > Show and choose an Extra from the submenu. Choosing one of the hidden Extras will cause it to show, and turn off all other Extras.

To turn on and off a group of Extras:

Choose View > Show > All to turn on and show all available Extras. Choose View > Show > None to turn off all Extras.

Displaying status information (Photoshop)

The status bar at the bottom of the window displays useful information—such as the current magnification and file size of the active image, and brief instructions for using the active tool.

To show or hide the status bar (Windows only):

Choose Window > Status Bar. A check mark indicates the item is showing.

Displaying file and image information

Information about the current file size and other features of the image is displayed at the bottom of the application window (Windows) or document window (Mac OS).

Note: *In ImageReady, if the document window is wide enough, two image information boxes appear, enabling you to view two different information options for the image at the same time. For more information about original and optimized images, see "Viewing optimized images (ImageReady)" on page 286.*

You can also view copyright and authorship information that has been added to the file. This information includes standard file information and Digimarc® watermarks. Photoshop automatically scans opened images for watermarks using the Digimarc Detect Watermark plug-in. If a watermark is detected, Photoshop displays a copyright symbol in the image window's title bar and updates the Copyright & URL area of the File Info dialog box.

To display file information in the document window (Photoshop):

1 Click the triangle in the bottom border of the application window (Windows) or document window (Mac OS).

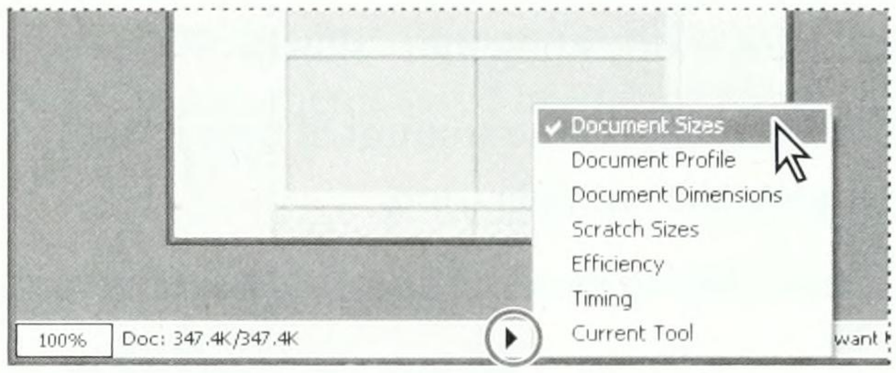


Illustration of file information view options in Photoshop

2 Select a view option:

- Document Size to display information on the amount of data in the image. The number on the left represents the printing size of the image—approximately the size of the saved, flattened file in Adobe Photoshop format. The number on the right indicates the file's approximate size including layers and channels.
- Document Profile to display the name of the color profile used by the image.
- Document Dimensions to display the dimensions of the image.

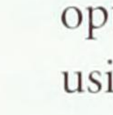
- Scratch Sizes to display information on the amount of RAM and scratch disk used to process the image. The number on the left represents the amount of memory that is currently being used by the program to display all open images. The number on the right represents the total amount of RAM available for processing images.
- Efficiency to display the percentage of time actually doing an operation instead of reading or writing the scratch disk. If the value is below 100%, Photoshop is using the scratch disk and, therefore, is operating more slowly.
- Timing to display the amount of time it took to complete the last operation.
- Current Tool to view the name of the active tool.

To display image information in the document window (ImageReady):

1 Click an image information box at the bottom of the document window.

2 Select a view option:

- Original/Optimized File Size to view the original and optimized file size images. The first value indicates the original image file size. The second value (present if the original image has been optimized) indicates the optimized image file size and file format based on the current settings in the Optimize palette.
- Optimized Information to view the file format, file size, number of colors, and dither percentage for the optimized image.
- Image Dimensions to view the image's pixel dimensions.
- Watermark Strength to view the strength of the Digimarc digital watermark in the optimized image, if present.



For more information on using digital watermarks, see Photoshop Help.

- Undo/Redo Status to view the number of undos and redos that are available for the image.
- Original in Bytes to view the size of the original, flattened image expressed in bytes.
- Optimized in Bytes to view the size of the optimized image expressed in bytes.
- Optimized Savings to view the percentage of the optimized image file size reduction, followed by the difference in bytes between the original and optimized sizes.
- Size/Download Time to view the file size for the optimized image and estimated download time using the selected modem speed.

Note: *Download times may vary based on Internet traffic and modem compression schemes. The value displayed is an approximation.*

To view additional file information:

Choose File > File Info.

To read a Digimarc watermark:

1 Choose Filter > Digimarc > Read Watermark.

If the filter finds a watermark, a dialog box displays the Creator ID, copyright year (if present), and image attributes.

2 Click OK, or for more information, choose from the following:

- If you have a Web browser installed, click Web Lookup to get more information about the owner of the image. This option launches the browser and displays the Digimarc Web site, where contact details appear for the given Creator ID.
- Call the phone number listed in the Watermark Information dialog box to get information faxed back to you.

Annotating images (Photoshop)

You can attach note annotations (notes) and audio annotations to an image in Photoshop. This is useful for associating review comments, production notes, or other information with the image. Because Photoshop annotations are compatible with Adobe Acrobat, you can use them to exchange information with Acrobat users as well as Photoshop users.

To circulate a Photoshop document for review in Acrobat, save the document in Portable Document Format (PDF) and ask reviewers to use Acrobat to add notes or audio annotations. Then import the annotations into Photoshop.

Notes and audio annotations appear as small nonprintable icons on the image. They are associated with a location on the image rather than with a layer. You can hide and show annotations, open notes to view or edit their contents, and play audio annotations. You can also add audio annotations to actions, and set them to play during an action or during a pause in an action.

To learn more about setting playback options, see Photoshop Help.

Adding notes and audio annotations

You can add notes and audio annotations anywhere on a Photoshop image canvas. When you create a note, a resizable window appears for typing text. When you record an audio annotation, you must have a microphone plugged into the audio-in port of your computer.

You can import both kinds of annotations from Photoshop documents saved in PDF or from Acrobat documents saved in PDF or Form Data Format (FDF).

To create a note:

1 Select the Notes tool .

2 Set options as needed:

- Enter an author name. The name appears in the title bar of the notes window.
- Choose a font and size for the note text.
- Select a color for the note icon and the title bar of note windows.

3 Click where you want to place the note, or drag to create a custom-sized window.

4 Click inside the window, and type the text. If you type more text than fits in the note window, the scroll bar becomes active.

Edit the text as needed:

- You can use the standard editing commands for your system (Undo, Cut, Copy, Paste, and Select All). In Windows, right-click in the text area and choose the commands from the context menu. In Mac OS, choose the commands from the Edit and Select menus. You can also use standard keyboard shortcuts for these editing commands.
- If you have the required software for different script systems (for example, Roman, Japanese, or Cyrillic) installed on your computer, you can switch between the script systems. Right-click (Windows) or Control-click (Mac OS) to display the context menu, and then choose a script system.

5 To close the note to an icon, click the close box.

To create an audio annotation:

1 Select the Audio Annotation tool .

2 Set options as needed:

- Enter an author name.
- Select a color for the audio annotation icon.

3 Click where you want to place the annotation icon.

4 Click Start and then speak into the microphone. When you're finished, click Stop.

To import annotations:

1 Choose File > Import > Annotations.

2 Select a PDF or FDF file that contains annotations, and then click Load. The annotations appear in the locations where they were saved in the source document.

Opening and editing annotations

A note or audio annotation icon marks the location of an annotation on an image. When you move the pointer over an annotation icon and pause, a message displays the author name. You use the icons to open notes or play audio annotations. You can show, hide, or move the icons, and edit the contents of notes.

Note: *Resizing an image does not resize the annotation icons and note windows. The icons and note windows keep their locations relative to the image. Cropping an image removes any annotations in the cropped area; you can recover the annotations by undoing the Crop command.*

To open a note or play an audio annotation:

Double-click the icon:

- If you are opening a note, a window appears, displaying the note text.
- If you are playing an audio annotation and have a sound card installed, the audio file begins to play.

To show or hide annotation icons:

Do one of the following:

- Choose View > Show > Annotations.
- Choose View > Extras. This command also shows or hides grids, guides, selection edges, target paths, and slices.

To edit annotations:

Do any of the following:

- To move an annotation icon, move the pointer over the icon until it turns into an arrow, and then drag the icon. You can do this with any tool selected. Moving a note icon does not move its note window.
- To move a note window, drag it by the title bar.
- To delete a selected annotation, press Delete.
- To edit the contents of a note, open the note, change any options, and add, delete, or change the text. You can use the same editing commands that you use when creating a note. (See "Adding notes and audio annotations" on page 39.)
- To delete all annotations, right-click (Windows) or Control-click (Mac OS) an annotation icon to display the context menu, and choose Delete All Annotations. You can also delete all annotations by clicking Clear All in the options bar for notes or audio annotations.

Jumping between applications

You can jump between Photoshop and ImageReady to transfer an image between the two applications for editing without closing or exiting the originating application. In addition, you can jump from ImageReady to other graphics editing applications and HTML editing applications installed on your system.

Jumping to an application saves you from having to close the file in one application and reopen it in another application.

Jumping between Photoshop and ImageReady

You can easily jump between Photoshop and ImageReady to use features in both applications when preparing graphics for the Web or other purposes. Jumping between the applications allows you to use the full feature sets of both applications while maintaining a streamlined workflow. Files and documents updated in one application can be automatically updated in the other application.

To jump between Photoshop and ImageReady:

Do one of the following:

- Click the Edit In Photoshop button or Edit In ImageReady button in the toolbox.
- Choose File > Edit in Photoshop or File > Edit in ImageReady.

When jumping between Photoshop and ImageReady, the applications use a temp file for transferring changes.

Jumping to other applications

In addition to jumping to current versions of Photoshop, you can jump to other graphics-editing applications and HTML-editing applications from within Photoshop and ImageReady.

When you install Photoshop or ImageReady, Adobe graphics-editing and HTML-editing applications currently on your system are added to the Jump To submenu. You can add more applications, including non-Adobe applications, to the Jump To submenu.

When you jump to a graphics-editing application, the original file is opened in the destination application. When you jump to an HTML editor, the optimized file and the HTML file are saved and opened in the destination application. If the image contains slices, all files for the full image are included. A preference enables files updated in another application to be automatically updated in Photoshop or ImageReady, when jumping back.

To jump to another application from ImageReady:

1 Do one of the following:

- Choose File > Jump To, and choose the desired application from the submenu.
- If the desired application doesn't appear in the Jump To submenu, choose Other Graphics Editor or Other HTML Editor to specify the application.

2 If the file has been modified since the last save, choose an option in ImageReady for saving the file:

- Click Save, and save the file with its current name and location.
- Click Save As, and save the file with a new name, a new location, or both.

To add an application to the Jump To submenu:

1 Create a shortcut (Windows) or an alias (Mac OS) for the application you want to add to the menu.

2 Drag the icon for the shortcut or alias into the Jump To Graphics Editor or the Jump To HTML Editor folder in the Helpers folder in the Photoshop program folder.

3 Restart ImageReady to view the application in the Jump To submenu.

To automatically update a file when jumping back to ImageReady from another application:

1 Do one of the following:

- In Windows, choose Edit > Preferences > General.
- In Mac OS, choose ImageReady > Preferences > General.

2 Select Auto-Update Files.

Previewing an image in a browser

To get an idea of how an optimized image will look in a Web page, you can preview the image in any browser installed on your system. The browser displays the image with a caption listing the image's file type, pixel dimensions, file size, and compression specifications in the first paragraph, and filename and other HTML information in the second paragraph. You can add additional browsers to the menu, and specify which browser will be launched when using a keyboard shortcut.

To add a browser:

1 Do one of the following:

- (Photoshop) Choose File > Save for Web, and then choose Edit List from the Select Browser menu . Click the Add button in the Browsers dialog box.

- (ImageReady) Choose File > Preview In > Edit Browser List. Click the Add button in the Edit Browsers List dialog box.

2 In the Preview in Other Browser dialog box, navigate to the browser application on your computer, and then click the Open button. The browser name appears in the Browsers dialog box.

To add all browsers on your computer:

1 Do one of the following:

- (Photoshop) Choose File > Save for Web, and then choose Edit List from the Select Browser menu . Click the Find All button. All the browsers installed on your computer appear. Click the OK button.
- (ImageReady) Choose File > Preview In > Edit Browser List. Click the Find All button. All the browsers installed on your computer appear. Click the OK button.

To preview an optimized image in a browser:

Do one of the following:

- (Photoshop) Choose File > Save for Web, and then choose the browser you want to use from the Select Browser menu. (Choose Other to select a browser not listed in the submenu.) You can also click the Preview In button to display the image in the default browser.
- (ImageReady) Choose File > Preview In, and then choose an option from the submenu (choose Other to select a browser not listed in the submenu), or select a browser from the Preview in Browser tool in the toolbox.

Managing libraries with the Preset Manager (Photoshop)

The Preset Manager centralizes management of brushes, swatches, gradients, styles, patterns, contours, custom shapes, and preset tools. You can use the Preset Manager to change the current set of preset items and create new libraries. Once you load a library in the Preset Manager, you can access the library's items in all locations that the type of preset is available, such as the options bar, Styles palette, Gradient Editor dialog box, and so on.

When you make a change to most presets, Photoshop prompts you to save the changed item as a new preset when you close the image file. This way you won't lose any existing or new presets.

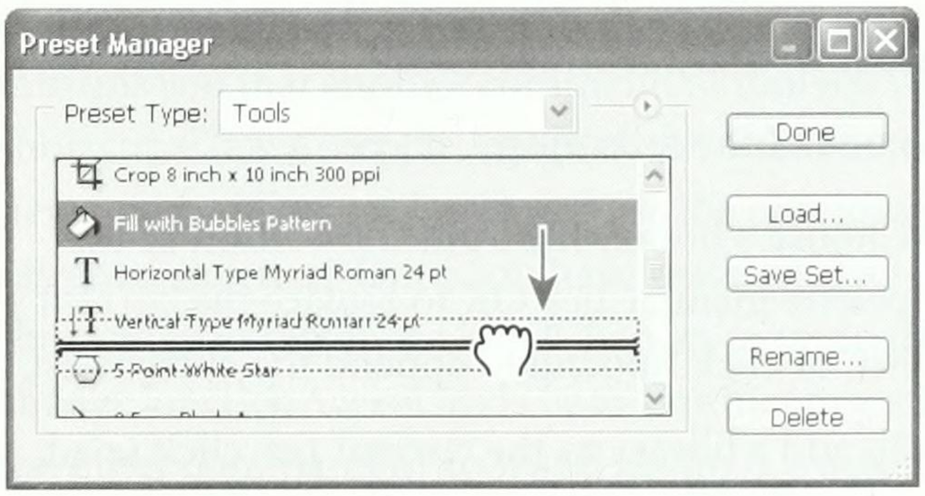


Illustration of rearranging tool presets in the Preset Manager

To display the Preset Manager:

Choose Edit > Preset Manager.

To switch between preset types:

Choose an option from the Preset Type pop-up menu.

To change how items are displayed:

Click the arrow ▶ and choose one of the following:

- Text Only to display the name of each preset item.
- Small Thumbnail or Large Thumbnail to display a thumbnail of each preset item. (These options are not available for tool presets.)
- Small List or Large List to display the name and thumbnail of each preset item. (These options are not available for swatch presets.)
- Stroke Thumbnail to display a sample brush stroke and brush thumbnail of each brush preset. (This option is available for brush presets only.)

To load a library of preset items:

Do one of the following:

- Choose a library file from the bottom of the palette menu. Click OK to replace the current list, or click Append to append the current list.
- To add a library to the current list, click Load, select the library file you want to add, and click Load.
- To replace the current list with a different library, choose Replace *Preset Type* from the palette menu. Select the library file you want to use, and click Load.

Note: *Each type of library has its own file extension and default folder in the Presets folder in the Photoshop program folder.*

To rename presets items:

1 Select a preset item. Shift-click to select multiple items:

2 Do one of the following:

- Click Rename, and then enter a new name for the brush, swatch, and so on.
- If the Preset Manager is set to display presets as thumbnails, double-click a preset, enter a new name, and click OK.
- If the Preset Manager is set to display presets as a list or text only, double-click a preset, enter a new name inline, and press Enter (Windows) or Return (Mac OS).

To rearrange preset items:

Drag an item up or down in the list.

To delete preset items:

Do one of the following:

- Select a preset item, and click Delete.
- Alt-click (Windows) or Options-click (Mac OS) the items you want to delete.

To create a new library of presets:

1 Do one of the following:

- To save all the presets in the list as a library, make sure that no items are selected.
- To save a subset of the current list as a library, hold down Shift, and select the items you want to save.

2 Click Save Set, choose a location for the library, enter a filename, and click Save.

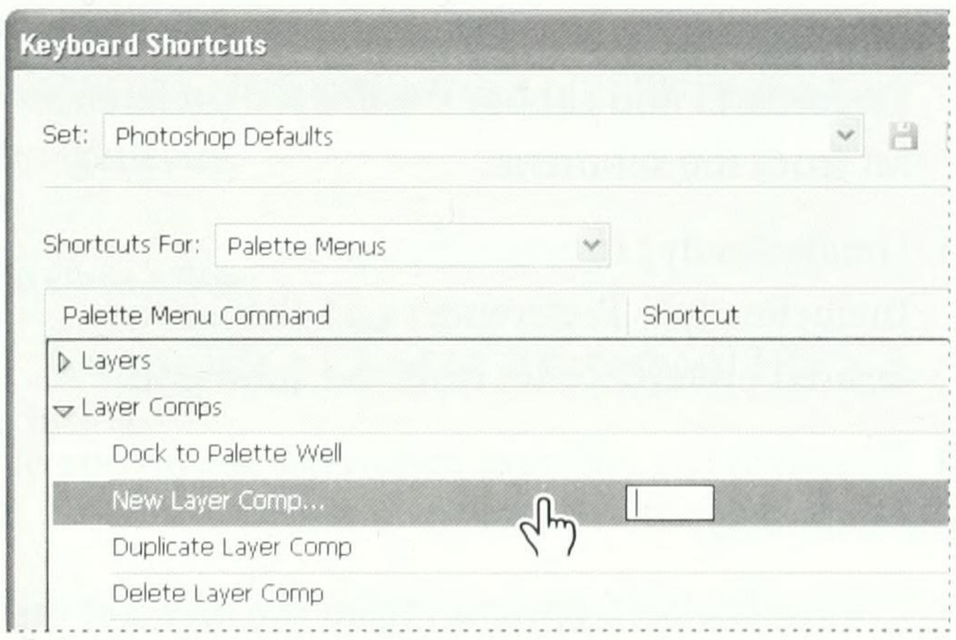
You can save the library anywhere. However, if you place the library file in the appropriate Presets folder inside the Photoshop program folder, the library name will appear at the bottom of the palette menu after you restart Photoshop.

To return to the default library of preset items:

Choose Reset *Preset Type* from the palette menu. You can either replace the current list or append the default library to the current list.

Customizing keyboard shortcuts

Photoshop provides a set of default keyboard shortcuts for commands and tools. However, you can customize keyboard shortcuts to your liking. You can change individual shortcuts within a set, and define your own sets of shortcuts.



Click a command row and enter a shortcut key in the empty text box to add a new shortcut.

To define new shortcuts:

1 Choose Edit > Keyboard Shortcuts.

2 Choose a set of shortcuts from the Set menu at the top of the Keyboard Shortcuts dialog box (Photoshop Defaults is the only option until you create a new set).

3 Choose a shortcut type (Application Menus, Palette Menus, or Tools) from the Shortcuts For menu.

4 In the Shortcut column of the scroll list, select the shortcut you want to modify.

5 Type a new shortcut. After you make changes, the name in the Set menu is suffixed with *(modified)*.

If the keyboard shortcut is already assigned to another command or tool in the set, an alert informs you that another command or tool has the shortcut. Click Accept to assign the shortcut to the new command or tool, and to erase the previously assigned shortcut. Once you have reassigned a shortcut, you can click Undo Changes to undo the change, or click Accept and Go to Conflict to go to the other command or tool and assign it a new shortcut.

6 When you have finished changing shortcuts, do one of the following:

- To discard all changes and exit the dialog box, click Cancel.
- To discard the last saved change without closing the dialog box, click Undo.
- To return a new shortcut to the default, click Use Default.

- To export the displayed set of shortcuts, click Summarize. You can use this HTML file to display in a Web browser.

To define a new set of shortcuts:

1 Do one of the following:

- To create a new set before you change default shortcuts, click the New Set button before you begin changing shortcuts.
- To create a new set that includes any modifications you've made, click the New Set button after you're done changing shortcuts.

2 Save the shortcuts as a file. Enter a name for the new set in the Name text box, and click Save. The new key set will appear in the pop-up menu under the new name.

To clear shortcuts from a command or tool:

1 Choose Edit > Keyboard Shortcuts.

2 In the Keyboard Shortcuts dialog box, select the command or tool name whose shortcut you want to delete.

3 Click Delete Shortcut.

To delete an entire set of shortcuts:

1 Choose Edit > Keyboard Shortcuts.

2 In the Set pop-up menu, choose the shortcut set that you want to delete.

3 Click the Delete Set button and then OK to exit the dialog box.

Setting preferences

Numerous program settings are stored in Adobe Photoshop CS Prefs file. Among the settings stored in this file are general display options, file-saving options, cursor options, transparency options, and options for plug-ins and scratch disks. Most of these options are set in the Preferences dialog box. Preference settings are saved each time you exit the application.

Unexpected behavior may indicate damaged preferences. By removing damaged preferences, you can restore preferences to their default settings.

To open a preferences dialog box:

1 Do one of the following:

- In Windows, choose Edit > Preferences and choose the desired preference set from the submenu.
- (Photoshop) In Mac OS, choose Photoshop > Preferences and choose the desired preference set from the submenu.
- (ImageReady) In Mac OS, choose ImageReady > Preferences and choose the desired preference set from the submenu.

2 To switch to a different preference set, do one of the following:

- Choose the preference set from the menu at the top of the dialog box.
- Click Next to display the next preference set in the menu list; click Prev to display the previous preference set.

For information on a specific preference option, see the Index.

To restore all preferences to their default settings:

Do one of the following:

- Press and hold Alt+Control+Shift (Windows) or Option+Command+Shift (Mac OS) immediately after launching Photoshop or ImageReady. You will be prompted to delete the current settings.
- In Mac OS, open the Preferences folder in the Library folder, and drag the Adobe Photoshop CS Settings folder to the Trash.

New Preferences files will be created the next time you start Photoshop or ImageReady.

Closing files and quitting

Closing and quitting is simple. Always make sure that you've saved any changes to your images before you close images and quit Photoshop or ImageReady.

To close a file:

1 Choose File > Close or (Photoshop) File > Close All.

2 Choose whether or not to save the file:

- Click Yes (Windows) or Save (Mac OS) to save the file.
- Click No (Windows) or Don't Save (Mac OS) to close the file without saving it.

To exit Photoshop or ImageReady:

1 Choose File > Exit (Windows) or File > Quit (Mac OS).

2 Choose whether or not to save any open files:

- Click Yes (Windows) or Save (Mac OS) for each open file to save the file.
- Click No (Windows) or Don't Save (Mac OS) for each open file to close the file without saving it.

Using plug-in modules

Plug-in modules are software programs developed by Adobe Systems and by other software developers in conjunction with Adobe Systems to add features to Photoshop and ImageReady. A number of importing, exporting, and special-effects plug-ins come with your program; they are automatically installed in folders inside the Photoshop Plug-ins folder.

For more information about plug-ins, see Photoshop Help.

Working with Adobe Version Cue managed projects

Adobe Version Cue™ is an innovative set of features designed to increase your productivity when you work alone or collaborate with others. Adobe Version Cue integrates design management into your existing workflows within and across the Adobe Creative Suite applications, including Adobe GoLive CS, Adobe Illustrator CS, Adobe InDesign CS, and Adobe Photoshop CS.

Note: *The Adobe Version Cue features are compatible only with the Adobe Version Cue Workspace, which is available only as part of the Adobe Creative Suite.*

Adobe Version Cue streamlines the following tasks while you work in the Creative Suite:

- Creating file versions
- Maintaining file security
- Organizing files into private or shared projects
- Browsing with file thumbnails, and searching file information and version comments
- Reviewing file information, comments, and file statuses in private and shared projects while you browse

In addition, you can use the Version Cue Workspace Administration for more advanced tasks:

- Duplicate, export, backup and restore projects.
- View information about projects in the workspace.
- Import files to the workspace using FTP or WebDAV.
- Delete file versions and remove file locks.
- Create project users and define their project privileges.
- Restrict access to a specific project.

To view the complete Adobe Version Cue documentation, see Adobe Version Cue Help. You can also view the Adobe Version Cue documentation as a PDF or print it by opening the VersionCueHelp.pdf file located on the Adobe Creative Suite CD and the Adobe Photoshop CS CD.

Assigning scratch disks

When your system does not have enough RAM to perform an operation, Photoshop and ImageReady use a proprietary virtual memory technology, also called scratch disks. A scratch disk is any drive or a partition of a drive with free memory. By default, Photoshop and ImageReady use the hard drive that the operating system is installed on as its primary scratch disk.

To learn more about assigning scratch disks, see Photoshop Help.

Chapter 2: Getting Images into Photoshop and ImageReady

You can get digital images from a variety of sources—you can create new images, import them from another graphics application, or capture them using a digital camera. Often you will begin by scanning a photograph, a slide, or an image. To create effective artwork, you must understand some basic concepts about how to work with digital images, how to produce high-quality scans, how to work with a variety of file formats, and how to adjust the resolution and size of images.

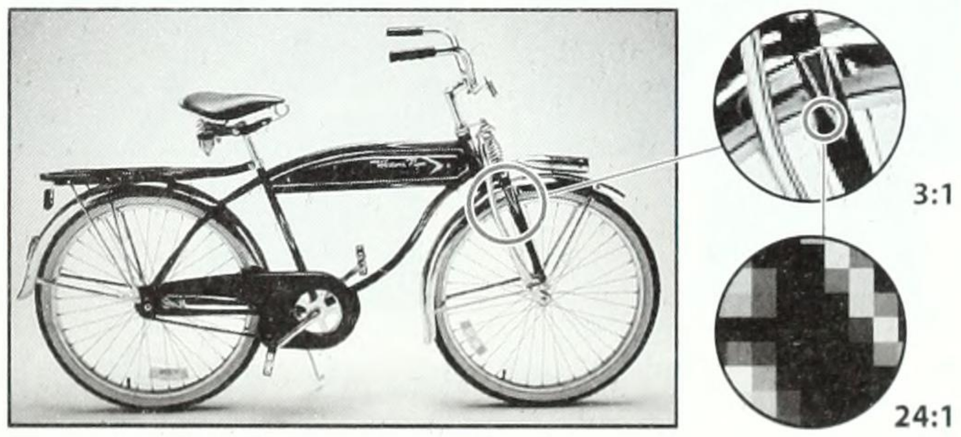
Working with bitmap images and vector graphics

Computer graphics fall into two main categories—*bitmap* and *vector*. You can work with both types of graphics in Photoshop and ImageReady; moreover, a Photoshop file can contain both bitmap and vector data. Understanding the difference between the two categories helps as you create, edit, and import artwork.

About bitmap images

Bitmap images—technically called *raster images*—are made up of a grid of dots known as pixels. When working with bitmap images, you edit pixels rather than objects or shapes. Bitmap images are the most common electronic medium for continuous-tone images, such as photographs or digital paintings, because they can represent subtle gradations of shades and color.

Bitmap images can lose detail when scaled on-screen because they are resolution-dependent, they contain a fixed number of pixels, and each pixel is assigned a specific location and color value. Bitmapped images can look jagged if they're printed at too low a resolution because the size of each pixel is increased (see "Understanding image size and resolution" on page 50).



Example of a bitmap image at different levels of magnification

About vector graphics

Vector graphics are made up of mathematically defined lines and curves called *vectors*. This means that you can move, resize, or change the color of a line without losing the quality of the graphic.

Vector graphics are resolution-independent—that is, they can be scaled to any size and printed at any resolution without losing detail or clarity. As a result, vector graphics are the best choice for representing bold graphics that must retain crisp lines when scaled to various sizes (logos, for example).

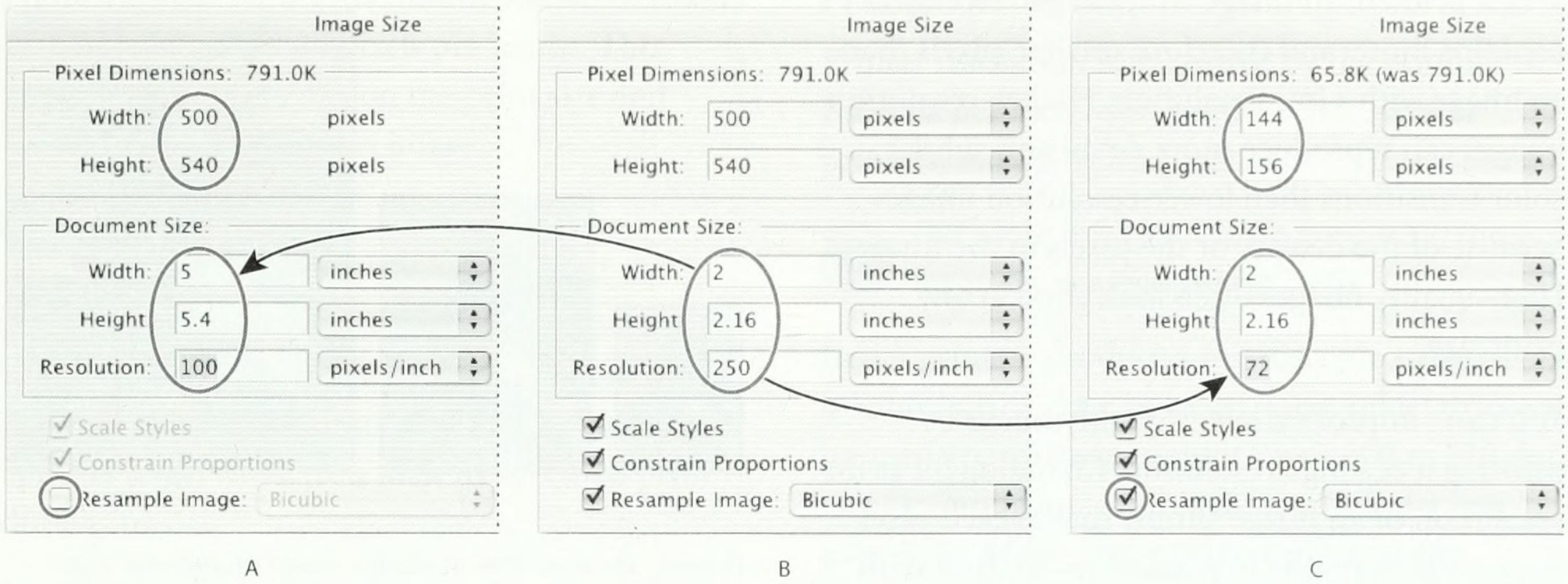
Example of a vector graphic at different levels of magnification

Note: *Because computer monitors can display images only on a grid, both vector graphics and bitmap images are displayed as pixels on-screen* *(see "Monitor resolution" on page 53).*

Understanding image size and resolution

Understanding the relationship between the pixel dimension of an image and its print resolution is key to producing high-quality images.

The amount of detail in an image depends on its pixel dimensions, while the image resolution controls how much space the pixels are printed over. For example, you can modify an image's resolution without changing the actual pixel data in the image—all you change is the printed size of the image. However, if you want to maintain the same output dimensions, changing the image's resolution requires a change in the total number of pixels.

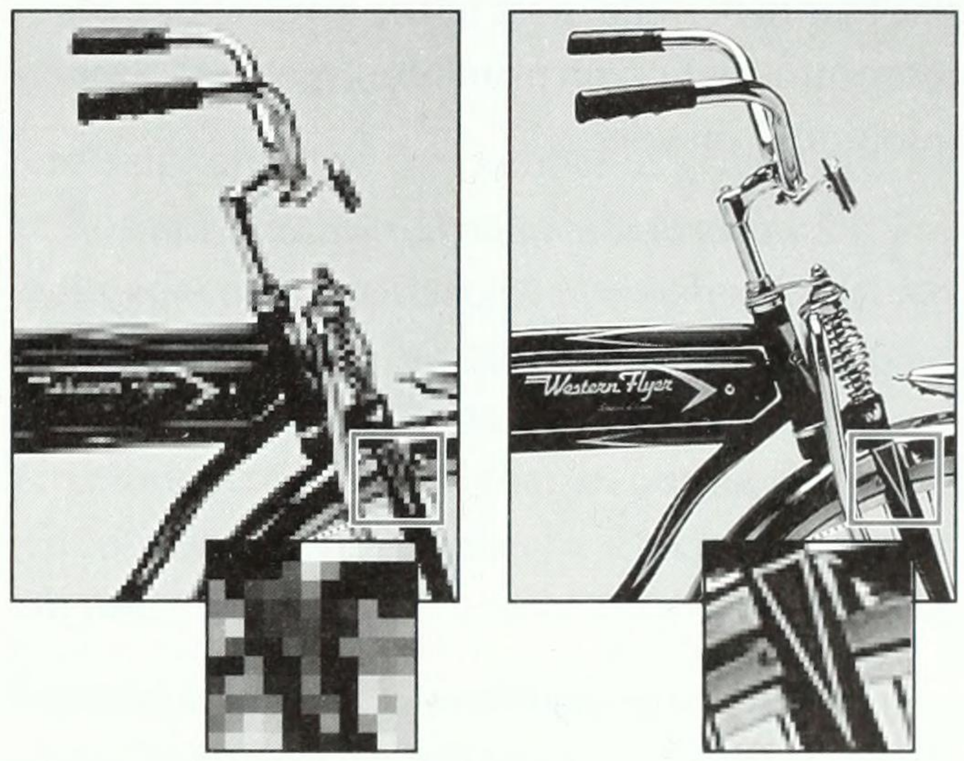


Pixel dimensions equal document (output) size times resolution
A. *Decreasing the resolution without changing pixel dimensions (no resampling)* ***B.*** *Original dimensions and resolution*
C. *Decreasing the resolution at same document size decreases pixel dimensions (resampling)*

Pixel dimensions and image resolution

The number of pixels along the height and width of a bitmap image is called the pixel dimensions of an image.

The resolution of an image is determined by the number of pixels per inch (ppi) printed on a page. In Photoshop, you can change the resolution of an image. In ImageReady, the resolution of images is always 72 ppi, to optimize the images for online media.

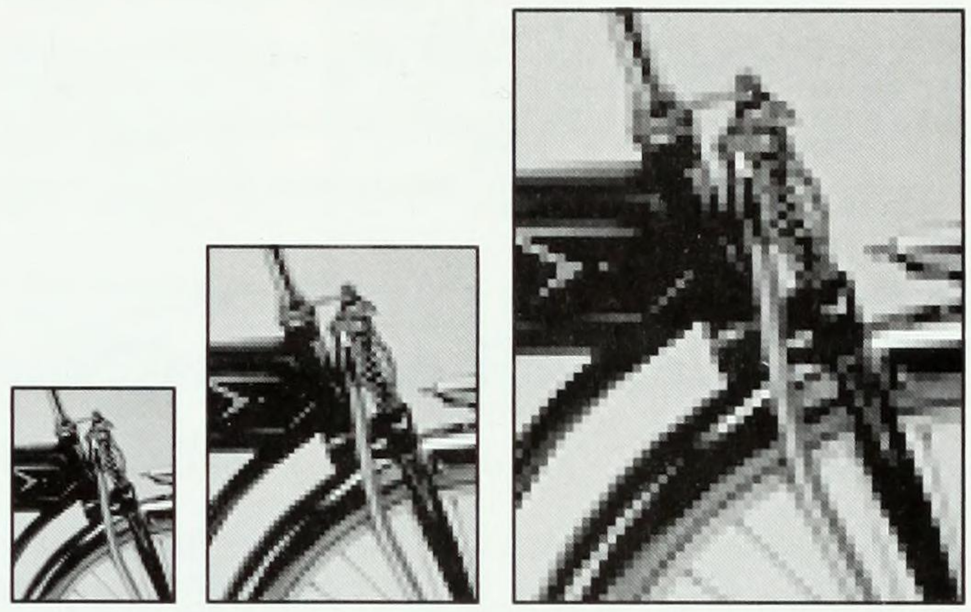


Example of an image at 72-ppi and 300-ppi

When printed, an image with a high resolution contains more, and therefore smaller, pixels than an image with a low resolution. Higher-resolution images can reproduce more detail and subtler color transitions than lower-resolution images because of the density of the pixels in the images. High-quality images often look good at any print size.

You can't improve a lower-quality image by printing it at a high resolution. Changing the print resolution of an image simply makes each pixel larger, which results in *pixelation*—output with large, coarse-looking pixels. Increasing the print resolution of an image doesn't add any pixel information to the image. You can make a low-resolution image look its best by picking a print size that makes the most of the pixels it has. For more information on print resolution, see "Printer resolution" on page 53.

It's important to note that video files are displayed only at 72 ppi. Even if an image has a higher resolution than 72 ppi, when it's displayed in a video editing application, the quality may not look very good.



Printing the same low-resolution image at different sizes
A. *Small print size* ***B.*** *Medium print size* ***C.*** *Large print size*

File size

The file size of an image is the digital size of the image file, measured in kilobytes (K), megabytes (MB), or gigabytes (GB). File size is proportional to the pixel dimensions of the image. Images with more pixels may produce more detail at a given printed size, but they require more disk space to store and may be slower to edit and print. Image resolution thus becomes a compromise between image quality (capturing all the data you need) and file size.

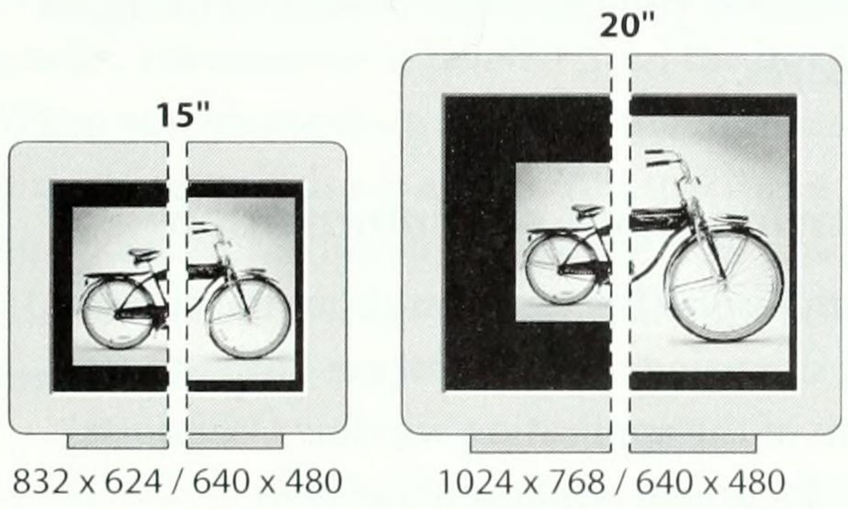
Another factor that affects file size is file format. Due to varying compression methods used by GIF, JPEG, and PNG file formats, file sizes can vary considerably for the same pixel dimensions. Similarly, color bit-depth and the number of layers and channels in an image affect file size.

Photoshop supports a maximum pixel dimensions of 300,000 by 300,000 pixels per image. This restriction places limits on the print size and resolution available to an image.

Monitor resolution

Image data are translated directly into monitor pixels. This means that when the image resolution is higher than the monitor resolution, the image appears larger on-screen than its specified print dimensions.

Monitor resolution depends on the size of the monitor plus its pixel setting. For example, a large image (800-by-600-pixel dimension) shown on a 15-inch monitor would almost fill the screen, but on a larger monitor, the same image would take up less room on the screen, and each pixel would appear larger.



Example of an image displayed on monitors of various sizes and resolutions

Important: *When you are preparing an image for online display, pixel dimensions become especially important. You should make sure that the size of an image allows room for the Web browser window controls on smaller monitors.*

Printer resolution

Printer resolution is measured by the number of ink dots per inch (dpi) produced by all laser printers, including imagesetters.

For more information on preparing images for press, see Photoshop Help.

Inkjet printers produce a microscopic spray of ink, not actual dots; however, most inkjet printers have an approximate resolution of 300 to 720 dpi (see "Printing images to a desktop printer" on page 326). Many inkjet printer drivers offer simplified print settings for choosing higher quality printing. To determine your printer's optimal resolution, check your printer documentation.

Screen frequency

Screen frequency is the number of printer dots or halftone cells per inch used to print grayscale images or color separations. Also known as screen ruling or line screen, screen frequency is measured in lines per inch (lpi)—or lines of cells per inch in a halftone screen. The higher an output device's resolution, the finer (higher) a screen ruling you can use.

The relationship between image resolution and screen frequency determines the quality of detail in the printed image. To produce a halftone image of the highest quality, you generally use an image resolution that is from 1.5 to at most 2 times the

screen frequency. But with some images and output devices, a lower resolution can produce good results. To determine your printer's screen frequency, check your printer documentation or consult your service provider.

Note: *Some imagesetters and 600-dpi laser printers use screening technologies other than halftoning. If you are printing an image on a nonhalftone printer, consult your service provider or your printer documentation for the recommended image resolutions.*

Screen frequency examples
A. *65 lpi: Coarse screen typically used to print newsletters and grocery coupons* ***B.*** *85 lpi: Average screen typically used to print newspapers* ***C.*** *133 lpi: High-quality screen typically used to print four-color magazines* ***D.*** *177 lpi: Very fine screen typically used for annual reports and images in art books*

Changing image size and resolution

Once you have scanned or imported an image, you may want to adjust its size. In Photoshop, the Image Size dialog box lets you adjust the pixel dimensions, print dimensions, and resolution of an image; in ImageReady, you can adjust only the pixel dimensions of an image.

For assistance with resizing and resampling images in Photoshop, choose Help > Resize Image. This interactive wizard helps you scale your images for print or online media.

Keep in mind that bitmap and vector data can produce different results when you resize an image. Bitmap data is resolution-dependent; therefore, changing the pixel dimensions of a bitmap image can cause a loss in image quality and sharpness. In contrast, vector data is resolution-independent; you can resize it without losing its crisp edges.

Displaying image size information

You can display information about the current image size using the information box at the bottom of the application window (Windows) or the document window (Mac OS).
(See "Displaying file and image information" on page 37.)

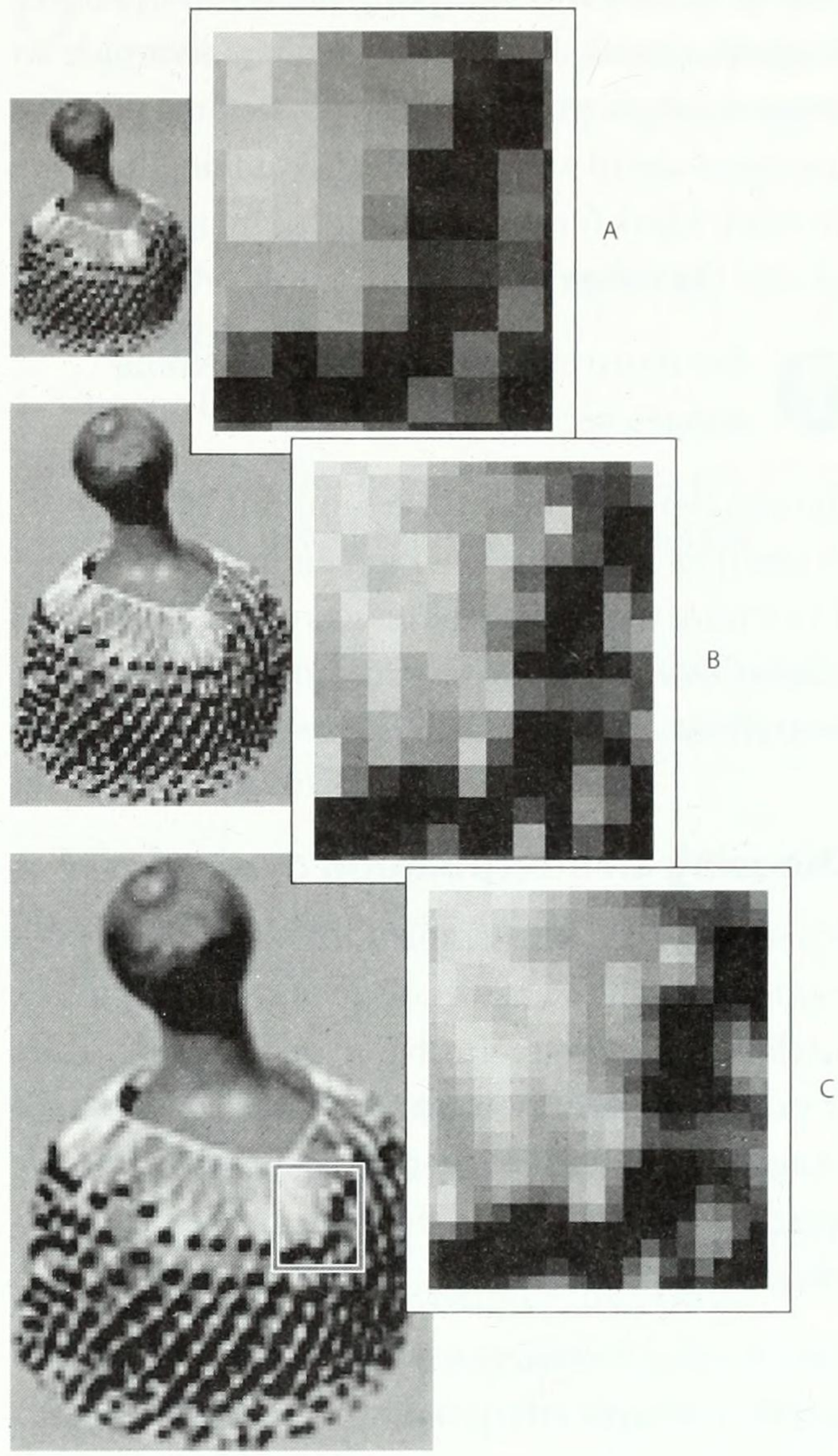
To display the current image size:

Do one of the following:

- (Photoshop) Press Alt (Windows) or Option (Mac OS), position the pointer over the file information box, and hold down the mouse button. The box displays the width and height of the image (both in pixels and in the unit of measurement currently selected for the rulers), the number of channels, and the image resolution.
- (ImageReady) Click an image information box, and select Image Dimensions from the pop-up menu. The box displays the width and height of the image in pixels.

About resampling

Resampling refers to changing the pixel dimensions (and therefore display size) of an image. When you *downsample* (decrease the number of pixels), information is deleted from the image. When you *resample up* (increase the number of pixels), new pixels are added. You specify an *interpolation* method to determine how pixels are added or deleted. (See "Choosing an interpolation method" on page 56.)



Resampling pixels
A. *Downsampled* ***B.*** *Original* ***C.*** *Resampled up*
(selected pixels displayed for each set of images)

Keep in mind that resampling can result in poorer image quality. For example, when you resample an image to larger pixel dimensions, the image will lose some detail and sharpness. Applying the Unsharp Mask filter to a resampled image can help refocus the image's details.

For more information on sharpening images, see Photoshop Help.

You can avoid the need for resampling by scanning or creating the image at a high enough resolution. If you want to preview the effects of changing pixel dimensions on-screen or print proofs at different resolutions, resample a duplicate of your file.

Choosing an interpolation method

When an image is resampled, an *interpolation method* is used to assign color values to any new pixels Photoshop creates, based on the color values of existing pixels in the image. Photoshop and ImageReady use sophisticated methods to preserve the quality and detail from the original image when you resample.

The General Preferences dialog box lets you specify a default interpolation method to use whenever images are resampled with the Image Size or transformation commands. The Image Size command also lets you specify an interpolation method other than the default.

To specify the default interpolation method:

1 Do one of the following:

- In Windows, choose Edit > Preferences > General.
- (Photoshop) In Mac OS choose Photoshop > Preferences > General.
- (ImageReady) In Mac OS, choose ImageReady > Preferences > General.

2 For Interpolation, choose one of the following options:

- Nearest Neighbor for the fast but less precise method. This method is recommended for use with illustrations containing non-anti-aliased edges, to preserve hard edges and produce a smaller file. However, this method can result in jagged effects, which become apparent when distorting or scaling an image or performing multiple manipulations on a selection.
- Bilinear for a medium-quality method.
- Bicubic for the slow but more precise method, resulting in the smoothest tonal gradations.
- Bicubic Smoother when you're enlarging images.
- Bicubic Sharper for reducing the size of an image. This method maintains the detail in a resampled image. It may, however, over-sharpen some areas of an image. In this case, try using Bicubic.

Changing the pixel dimensions of an image

When preparing images for online distribution, it's useful to specify image size in terms of the pixel dimensions. Keep in mind that changing pixel dimensions affects not only the size of an image on-screen but also its image quality and its printed characteristics—either its printed dimensions or its image resolution. (See "Understanding image size and resolution" on page 50.)

To change the pixel dimensions of an image (Photoshop):

1 Choose Image > Image Size.

2 To maintain the current proportions of pixel width to pixel height, select Constrain Proportions. This option automatically updates the width as you change the height, and vice versa.

3 Under Pixel Dimensions, enter values for Width and Height. To enter values as percentages of the current dimensions, choose Percent as the unit of measurement. The new file size for the image appears at the top of the Image Size dialog box, with the old file size in parentheses.

4 Make sure that Resample Image is selected, and choose an interpolation method. (See "Choosing an interpolation method" on page 56.)

5 If your image has layers with styles applied to them, select Scale Styles to scale the effects in the resized image. This option is available only if you selected Constrain Proportions.

6 When you're done setting options, click the OK button.

For best results in producing a smaller image, downsample and apply the Unsharp Mask filter. To produce a larger image, rescan the image at a higher resolution.

To change the pixel dimensions of an image (ImageReady):

1 Choose Image > Image Size.

2 To maintain the current proportions of pixel width to pixel height, select Constrain Proportions.

3 Under New Size, enter values for Width, Height, or Percent. The New Size text field displays the new file size for the image.

4 Select a interpolation method from the Quality pop-up menu (see "Choosing an interpolation method" on page 56).

Changing the print dimensions and resolution of an image (Photoshop)

When creating an image for print media, it's useful to specify image size in terms of the printed dimensions and the image resolution. These two measurements, referred to as the *document size*, determine the total pixel count and therefore the file size of the image; document size also determines the base size at which an image is placed into another application. You can further manipulate the scale of the printed image using the Print with Preview command; however, changes you make using the Print with Preview command affect only the printed image, not the document size of the image file.

To learn more about the Print with Preview command, see Photoshop Help.

If you turn on resampling for the image, you can change print dimensions and resolution independently (and change the total number of pixels in the image). If you turn off resampling, you can change either the dimensions or the resolution—Photoshop adjusts the other value automatically to preserve the total pixel count. For the highest print quality, it's generally best to change the dimensions and resolution first without resampling. Then resample only as necessary.

To change the print dimensions and resolution of an image:

1 Choose Image > Image Size.

2 Change the print dimensions, image resolution, or both:

- To change only the print dimensions or only the resolution and adjust the total number of pixels in the image proportionately, make sure that Resample Image is selected. Then choose an interpolation method. (See "Choosing an interpolation method" on page 56.)
- To change the print dimensions and resolution without changing the total number of pixels in the image, deselect Resample Image.

3 To maintain the current proportions of image width to image height, select Constrain Proportions. This option automatically updates the width as you change the height, and vice versa.

4 Under Document Size, enter new values for the height and width. If desired, choose a new unit of measurement. Note that for Width, the Columns option uses the width and gutter sizes specified in the Units & Rulers preferences. For more information, see "Using columns (Photoshop)" on page 33.

5 For Resolution, enter a new value. If desired, choose a new unit of measurement.

To return to the original values displayed in the Image Size dialog box, hold down Alt (Windows) or Option (Mac OS), and click Reset.

To view the print size on-screen:

Do one of the following:

- Choose View > Print Size.
- Select the Hand tool or Zoom tool, and click Print Size in the options bar.

The magnification of the image is adjusted to display its approximate printed size, as specified in the Document Size area of the Image Size dialog box. Keep in mind that the size and resolution of your monitor affect the on-screen print size.

Determining a recommended resolution for an image (Photoshop)

If you plan to print your image using a halftone screen, the range of suitable image resolutions depends on the screen frequency of your output device. You can have Photoshop determine a recommended resolution for your image based on your device's screen frequency. (See "Understanding image size and resolution" on page 50.)

For more information on selecting halftone screen attributes, see Photoshop Help.

Note: *If your image resolution is more than 2.5 times the screen ruling, an alert message appears when you try to print the image. This means that the image resolution is higher than necessary for the printer. Save a copy of the file, and then reduce the resolution.*

To determine a suggested resolution for an image:

1 Choose Image > Image Size.

2 Click Auto.

3 For Screen, enter the screen frequency for the output device. If desired, choose a new unit of measurement. Note that the screen value is used only to calculate the image resolution, not to set the screen for printing.

Important: *To specify the halftone screen ruling for printing, you must use the Halftone Screens dialog box, accessible through the Print with Preview command.*

For more information on halftone screen attributes, see Photoshop Help.

4 For Quality, select an option:

- Draft to produce a resolution the same as the screen frequency (no lower than 72 pixels per inch).
- Good to produce a resolution 1.5 times the screen frequency.
- Best to produce a resolution 2 times the screen frequency.

Getting images from digital cameras

You can import images from your digital camera using TWAIN drivers, or using Windows Image Acquisition (WIA) if you're using a PC. Once images are opened in Photoshop or ImageReady, you can edit them.

You can also get images using a memory or flash card reader.

Importing an image using the TWAIN interface

TWAIN is a cross-platform interface for acquiring images captured by certain digital cameras.

You must install the TWAIN drivers that came with your camera before you can use it to import images into Photoshop and ImageReady. See the documentation provided by your device manufacturer for installation information.

To import images from a digital camera using the TWAIN interface (Photoshop):

Choose File > Import, and choose the device you want to use from the submenu.

To import images from a digital camera using the TWAIN interface (ImageReady):

1 If you're using the TWAIN device for the first time with ImageReady, choose File > Import > TWAIN Select. Then select the device you want to use. You do not need to repeat this step for subsequent use of the TWAIN module.

If more than one TWAIN device is installed in your system and you want to switch devices, use the TWAIN Select command.

2 To import the image, choose File > Import > TWAIN Acquire.

Importing images from digital cameras using Windows Image Acquisition (WIA)

Certain digital cameras import images using WIA support. When you use WIA, Photoshop works with Windows and your digital camera or scanner software to import images directly into Photoshop.

Note: *WIA is only available if you are using Windows XP.*

To import images from a digital camera using WIA:

1 Choose File > Import > WIA Support.

2 Choose a destination on your computer for saving your image files.

3 Make sure Open Acquired Images in Photoshop is checked. If you have a large number of images to import, or if you want to edit the images at a later time, deselect it.

4 Select Unique Subfolder if you want to save the imported images directly into a folder named with the current date.

5 Click Start.

6 Select the digital camera that you want to import images from.

Note: *If the name of your camera does not appear in the submenu, verify that the software and drivers were properly installed and that the camera is connected.*

7 Choose the image or images you want to import:

- Click the image from the list of thumbnails to import the image.
- Hold down Shift and click on multiple images to import them at the same time.
- Click Select All to import all available images.

8 Click Get Picture to import the image.

Working with camera raw image files

The Photoshop Camera Raw plug-in lets you open a camera's *raw* digital image files so that you can edit them in Photoshop or ImageReady. As you open the camera raw image files, you can quickly apply adjustments such as exposure compensation or tonal adjustments without compressing the image or losing any of the original image data. The camera raw image file can then be brought into Photoshop and saved in a final format such as PSD, JPEG, Large Document Format (PSB), or TIFF. By default, Camera Raw settings are stored on a per-image basis in a Camera Raw database file. You can choose a preference to have the settings saved in *sidecar XMP files* (files that accompany the original camera raw image file in the same folder) instead of a Camera Raw database. For more information about Camera Raw settings, see "About Photoshop Camera Raw plug-in settings" on page 71.

About camera raw files

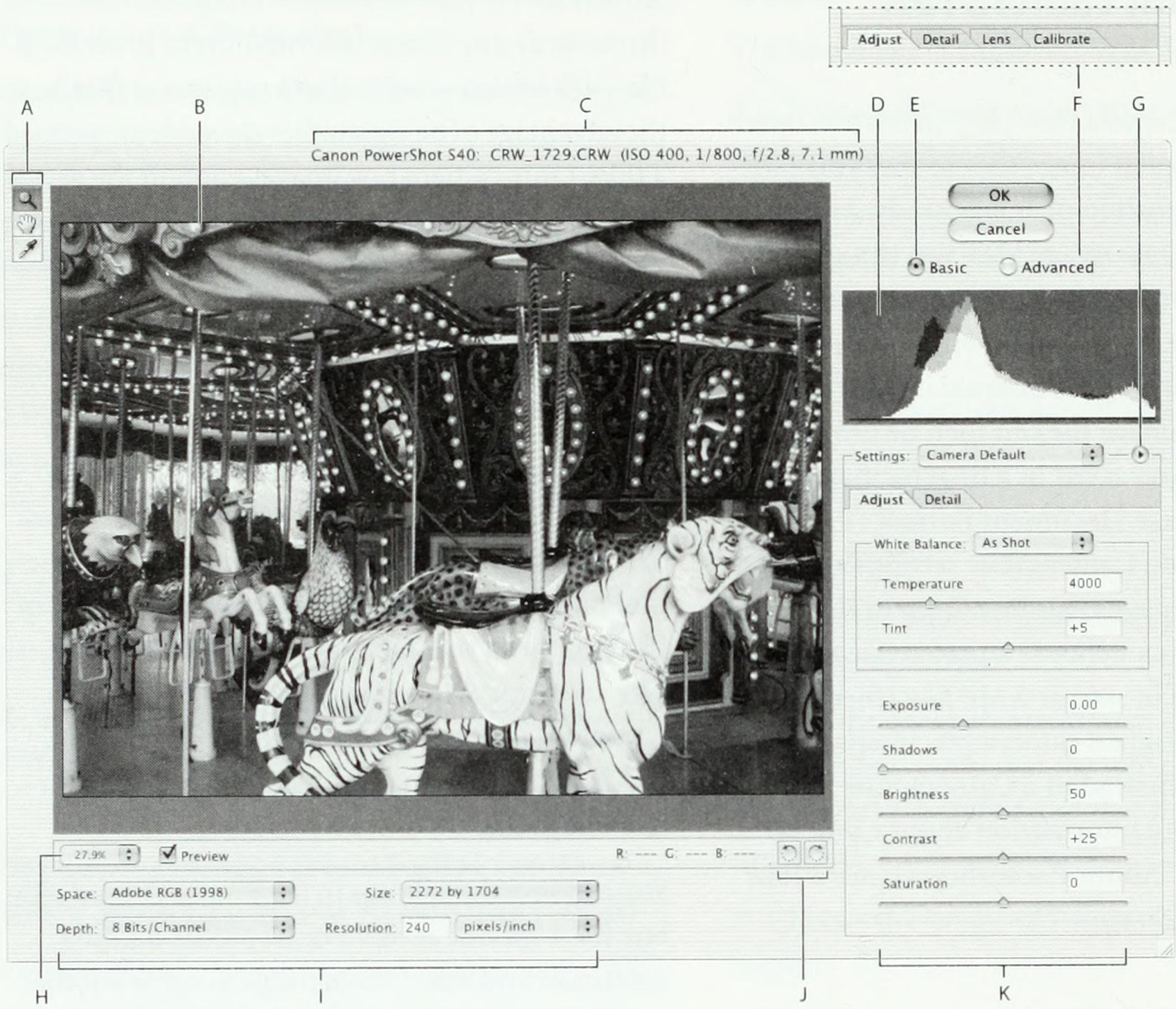
Camera raw image file formats are like digital negatives. They are created by a variety of digital cameras and contain all the information the camera has about the image. The image information is directly captured from the camera's Charged Coupled Device (CCD) or Complementary Metal-Oxide Semiconductor (CMOS) without filters and adjustments applied by the camera. This lets photographers interpret the image data rather than letting the camera make the adjustments and conversions.

Similar to TIFF, a camera raw image file does not throw away any image information to generate a file—it's *lossless*—but camera raw image files have the advantage of being smaller than uncompressed TIFFs. Only camera raw images contain the actual data captured by the sensor without any in-camera processing.

About the Camera Raw plug-in

Although each camera uses a unique format to save the camera raw image data, the Photoshop Camera Raw plug-in can open many camera raw file formats. Your workflow is improved because the camera raw image files are opened directly in Photoshop so you can edit them immediately. The adjustments available with the Photoshop Camera Raw Plug-in provide flexibility to produce the best image possible from a camera raw image file.

You can save the settings in the Camera Raw dialog box for a specific camera or a specific lighting condition and reuse the settings to open another camera raw image file or a batch of camera raw image files.



Camera Raw dialog box
A. *Zoom, Hand, and White Balance tools* ***B.*** *Image preview* ***C.*** *Camera, file name, and some EXIF information* ***D.*** *Histogram* ***E.*** *Basic mode* ***F.*** *Advanced mode displays additional tabs* ***G.*** *Photoshop Camera Raw plug-in menu* ***H.*** *Zoom level menu* ***I.*** *Image attributes* ***J.*** *Rotate Preview buttons* ***K.*** *Adjustment sliders*

Displaying the Camera Raw dialog box Opening a camera raw file in Photoshop or ImageReady generally opens the Camera Raw dialog box. It's possible to suppress the dialog box from displaying for each file when opening a batch of camera raw files. The Camera Raw dialog box is automatically suppressed when using a batch of camera raw files for a Web Photo Gallery, Picture Package, or Contact Sheet. For more information about opening a batch of camera raw files, see "Creating an action to open camera raw image files" on page 74.

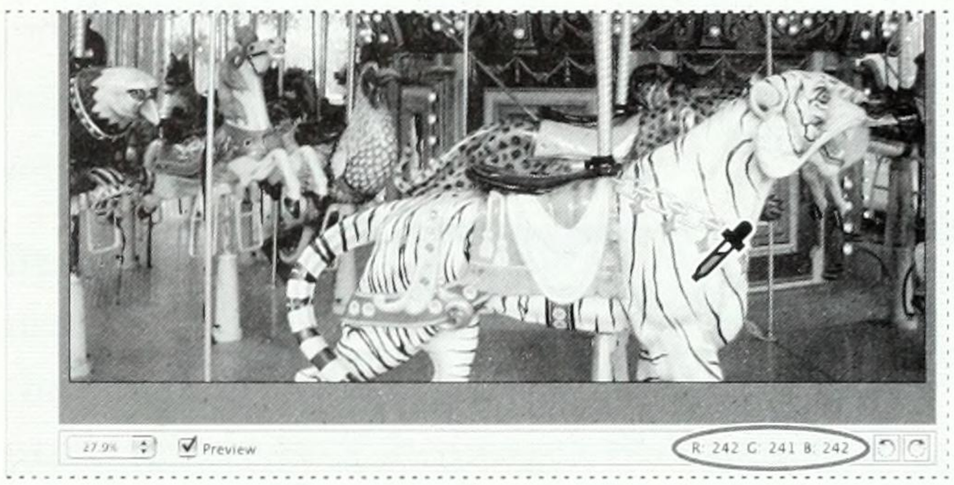
Basic and Advanced modes By default, the Camera Raw dialog box opens in Basic mode. Selecting the Advanced mode makes the following additional controls available:

- The Camera Raw Preferences can be accessed from the Camera Raw plug-in menu. This is where you can specify the sharpening behavior of the Camera Raw plug-in and also choose where an image's Camera Raw settings are stored. For more information on storing Photoshop Camera Raw plug-in settings, see "About Photoshop Camera Raw plug-in settings" on page 71, and for more information on sharpening with the Camera Raw plug-in, see "Using the Sharpness slider to reduce blur" on page 68.
- The Lens tab has controls to compensate for chromatic aberration and vignetting introduced by a digital camera. For more information on using the controls in the Lens tab, see "Compensating for chromatic aberration" on page 70.
- The Calibrate tab has controls to correct a color cast in the shadows and adjust the Camera Raw built-in profile to alter the rendering of non-neutral colors. For more information on using the controls in the Calibrate tab, see "Making advanced color adjustments" on page 71.

Note: *The Camera Raw Preferences, Lens tab, and Calibrate tab are not available when the Camera Raw dialog box is in Basic mode.*

Using the histogram and RGB levels The Photoshop Camera Raw histogram shows all three channels (Red, Green, and Blue) of the image simultaneously. The histogram updates automatically as you adjust the settings in the Camera Raw dialog box. For more information on using histograms, see "Reading a histogram" on page 106.

Moving the Zoom, Hand, or White Balance tool over the preview image displays the RGB values for the area being sampled.



RGB values appear whenever a tool pointer hovers over an area of the preview image.

Rotating the preview image Click the Rotate Preview buttons . Rotation is applied to the preview in the Camera Raw dialog box. Photoshop automatically applies the rotation when the file is opened in a document window. Because Photoshop saves an image's Camera Raw settings, the rotation will still be applied to the dialog box preview when you reopen the camera raw file.

Zooming in and out of the preview image Do one of the following:

- Choose a percentage from the zoom level menu.
- Select the Zoom tool, and either drag a selection or click in the preview image. To zoom out, hold down the Alt (Windows) or Option (Mac OS) key while using the Zoom tool.

If the preview image is larger than the viewing window, use the Hand tool to move the image and view different areas. You can hold down the spacebar to access the hand tool while using another tool.

Disabling the Preview option Deselect the Preview option to see the image unchanged, without the applied image setting adjustments.

Opening camera raw image files

The Photoshop Camera Raw plug-in lets you open a camera's raw image file directly in Photoshop or ImageReady without using another program to convert the camera raw image into a readable format. As a result, all your work with camera raw image files can be completely done in Photoshop.

To open a camera raw image file for editing in Photoshop and ImageReady:

1 Open a camera raw image file by choosing File > Open or using the File Browser (see "Using the File Browser (Photoshop)" on page 79) in Photoshop. The Camera Raw dialog box automatically opens, displaying a preview of the image.

2 Adjust the settings such as the image attributes (target color space profile, bit depth, pixel size, and resolution), the white balance, exposure and tonal settings, sharpness, smoothness, and color noise reduction.

To restore all your adjustments to the original settings, hold down the Alt (Windows®) or Option (Mac OS) key. The Cancel button will change to a Reset button. While holding the key down, click the Reset button.

3 When you've finished your adjustments, click OK. A copy of the camera raw image file with the Photoshop Camera Raw plug-in settings applied opens in Photoshop. You can then edit the image and save it in a Photoshop-supported format.

The original camera raw image file remains unaltered. The settings applied to the camera raw image are stored either in the Camera Raw database file or as a sidecar XMP file. For more information on storing Photoshop Camera Raw plug-in settings, see "About Photoshop Camera Raw plug-in settings" on page 71.

Note: *Although Photoshop and ImageReady can open a camera raw image file, they cannot save an image as a camera raw image file. A Photoshop Raw format is available in Photoshop, but it is not the same format as a camera raw image file. A camera's raw image file contains the unprocessed bits from the camera's CCD or CMOS. This data needs significant processing, such as the processing done by the Photoshop Camera Raw plug-in. The Photoshop Raw format (.raw) is a flexible file format for transferring images between applications and computer platforms.*

Adjusting the image attributes

The Camera Raw dialog box lets you change the image settings for the target color space profile, bit depth, pixel size for opening the image, and resolution using the following controls:

Space Specifies the *target* color space profile. Generally, this should be set to the same value as your Photoshop RGB working space. Keep in mind that the *source* profile for camera raw image files is usually the camera-native color space. (Higher-end cameras let you select a color space like Adobe RGB for the color profile when photographing.) The profiles listed in the Space menu are built into the Photoshop Camera Raw plug-in. If you want to use a color space that's not listed in the Space menu, choose ProPhoto RGB, and then convert to the working space of your choice when the file opens in Photoshop.

Depth Specifies whether the image opens as 8 or 16 bits per channel in Photoshop. In ImageReady, 8 bits per channel is the only option.

Size Specifies the pixel size at which to open the image. The default for this setting is the pixel size you used to photograph the image. Use the Size menu if you want to resample the image to a larger or smaller size.

- For square-pixel cameras, the Size menu is mostly a convenience for the user. However, choosing a smaller-than-native size is useful to speed processing when you are planning a smaller final image anyway. Picking a larger size is similar to upsampling in Photoshop.
- For non-square pixel cameras, the native size is the one that most closely preserves the total pixel count. This means the pixels in one dimension will be upsampled, while in the other dimension they will be downsampled. Choosing the next size larger than the native size keeps the pixel count along the high-resolution dimension constant, while upsampling the lower-resolution dimension to create square pixels. This larger size preserves maximum detail for non-square pixel cameras, since neither dimension is downsampled.

Note: *You can always change the pixel size of the image after it opens in Photoshop.*

Resolution Specifies the printing resolution the image will be printed at or the amount of data in the image. This setting does not affect the actual pixels (pixel size of the image). For example, a 2048 x 1536 pixel image prints at approximately 28 1/2 x 21 1/4 inches at 72 dpi. When the resolution is changed to 300 dpi, the same image prints at approximately 6 3/4 x 5 1/8 inches. Resolution can also be adjusted in Photoshop using the Image Size command.

Setting the white balance

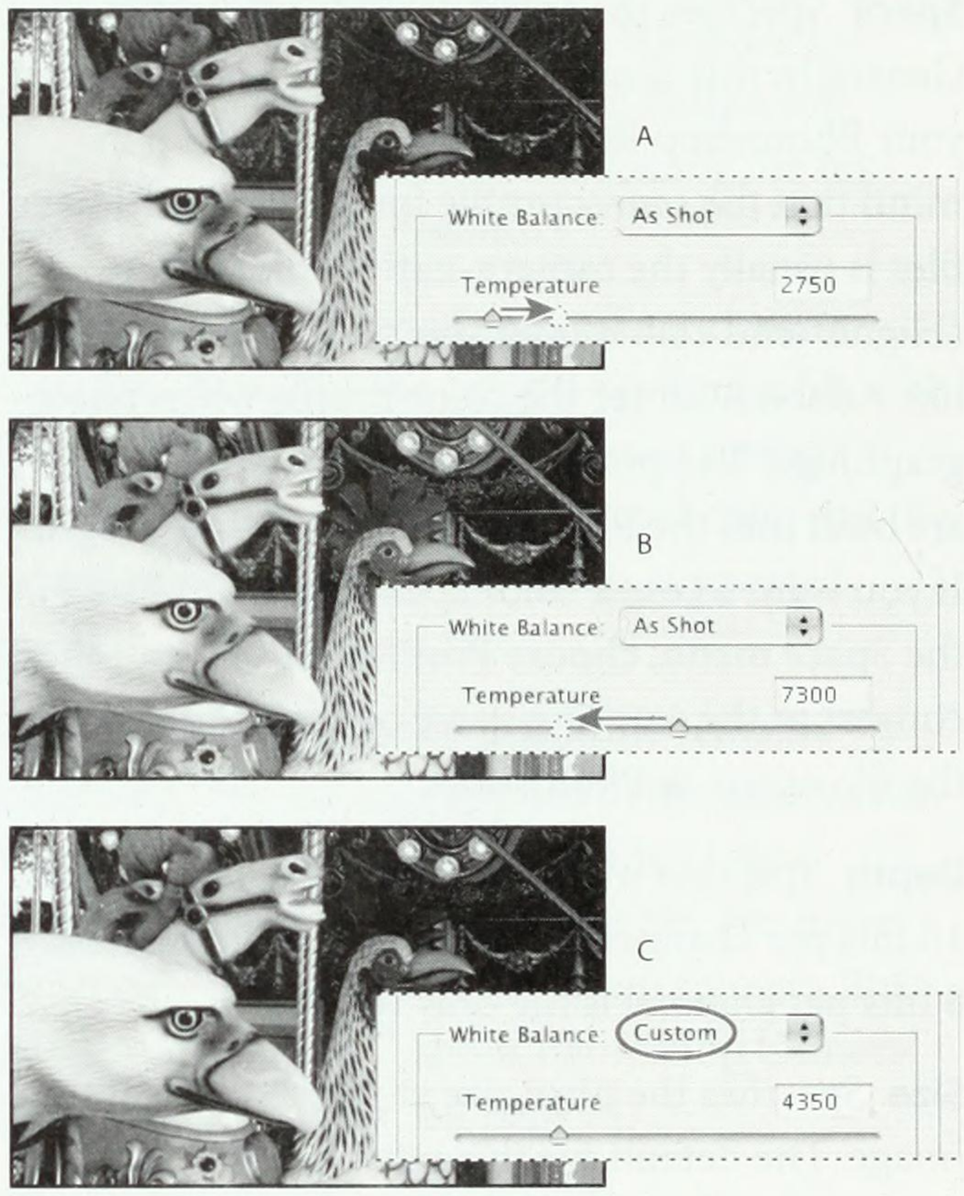
A digital camera records the white balance at the time of exposure as a metadata entry. This is read by the Photoshop Camera Raw plug-in and set as the initial setting when opening an image in the Camera Raw dialog box. It usually comes close to being the correct color temperature. You can make adjustments if the white balance is not quite right.

The Adjust tab in the Photoshop Camera Raw dialog box has three controls for making adjustments to remove a color cast in your image. The Photoshop Camera Raw plug-in also has a control in the Advanced mode for correcting a shadow color cast (a color cast that's in the shadows even after the white balance has been adjusted). For more information on correcting a shadow color cast, see "Correcting a shadow color cast" on page 71.

White Balance Sets the color balance of the image to reflect the lighting conditions under which the photo was taken. In many cases, choosing a white balance from the White Balance menu provides satisfactory results. In some cases, you may want to customize the white balance using the Temperature and Tint adjustments.

Note: *The Photoshop Camera Raw plug-in can read the white balance settings of some cameras. Leaving the White Balance menu set to As Shot uses the camera's white balance settings. For cameras whose white balance settings are not recognized by the Photoshop Camera Raw plug-in, leaving the White Balance menu set to As Shot is the same as choosing Auto: the Photoshop Camera Raw plug-in reads the image data and automatically adjusts the white balance.*

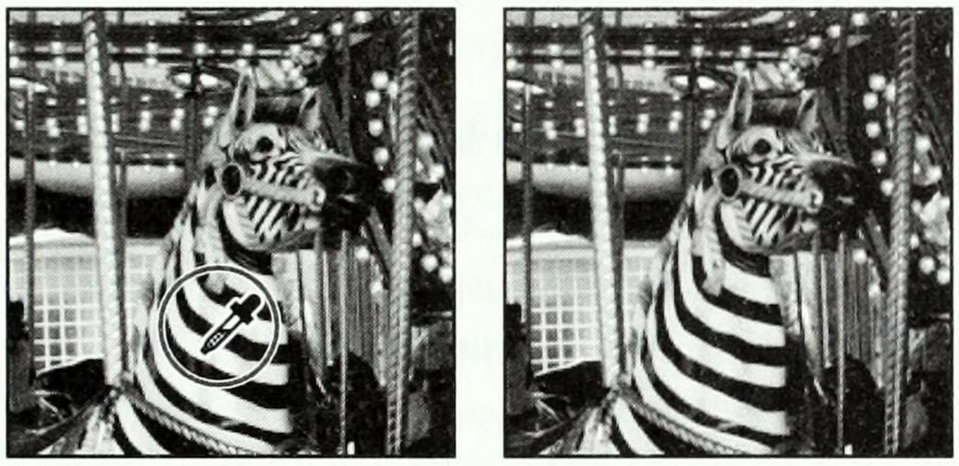
Temperature Lets you fine-tune the white balance to a custom color temperature. Set the color temperature using the Kelvin color temperature scale. Moving the slider to the left corrects for a photo taken with a lower color temperature of light; the plug-in makes the image colors bluer to compensate for the lower color temperature (yellowish) of the ambient light. Conversely, moving the slider to the right corrects for a photo taken with a higher color temperature of light; the plug-in makes the image colors warmer (yellowish) to compensate for the higher color temperature (bluish) of the ambient light.



Correcting the white balance
A. *Moving the Temperature slider to the right corrects a photo taken with a higher color temperature of light*
B. *Moving the Temperature slider to the left corrects a photo taken with a lower color temperature of light*
C. *Resulting photo with color temperature adjustment*

Tint Lets you fine-tune the white balance to compensate for green or magenta tint in photos. Moving the slider to the left (negative values) adds green to the photo, while moving the slider to the right (positive values) adds magenta.

To adjust the white balance quickly, select the White Balance tool, and then click an area in the preview image that should be a neutral gray or white. The Temperature and Tint sliders automatically adjust to make the selected color exactly neutral (if possible). If you're clicking whites, choose a highlight area that contains significant white detail rather than a specular highlight.



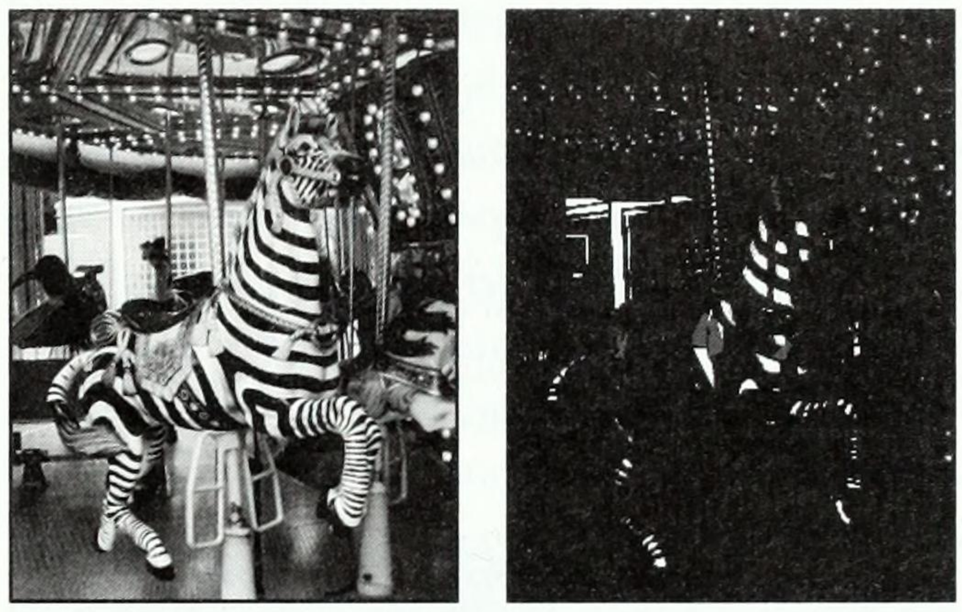
Using White Balance tool to click a neutral white area and result

Making tonal adjustments

The Adjust tab in the Camera Raw dialog box has five sliders for making tonal adjustments to your image.

Exposure Adjusts the brightness or darkness of the image. Moving the slider to the left darkens the image, while moving the slider to the right brightens the image. The values are in increments equivalent to f-stops. A +1.50 adjustment is similar to increasing the aperture 1 1/2 stops wider. Likewise, a –1.50 adjustment is like reducing the aperture 1 1/2 stops.

Holding down the Alt (Windows) or Option (Mac OS) key while moving the Exposure slider lets you preview where the highlights become completely white with no detail (clipped). One way to use this feature is to adjust the slider until the highlights (not specular highlights) are completely clipped, and then back off slightly on the adjustment. Black indicates areas that are not clipped, and color indicates areas that are being clipped in only one or two channels.



Holding the Alt (Windows) or Option (Mac OS) key down while moving the Exposure slider shows the highlights being clipped.

***Note:** Clipping is the shifting of pixel values to either the highest highlight value (255) or the lowest shadow value (0). Areas of a photo that are clipped are either completely white or completely black and have no image detail.*

Shadows Controls what input levels will be mapped to black in the final image. Moving the slider to the right increases the areas that are mapped to black. This sometimes creates the impression of increased contrast in the image. Using the Shadows slider is similar to using the black point slider for the input levels in the Photoshop Levels command.

For more information on using the Levels dialog box, see Photoshop Help.

Note: *Holding down the Alt (Windows) or Option (Mac OS) key while moving the Shadow slider lets you preview where the shadows become completely black with no detail (clipped). One way to use this feature is to move the slider until the shadows begin to get clipped, and then back off slightly on the adjustment. Color indicates areas that are being clipped in one or two channels, and white indicates areas that aren't clipped.*

Brightness Adjusts the brightness or darkness of the image, similar to the Exposure slider. However, instead of clipping the image in the highlights (areas that are completely white, no detail) or shadows (areas that are completely black, no detail), Brightness compresses the shadows and expands the highlights when the slider is moved to the left. Generally, you use the Brightness slider to adjust the overall brightness or darkness after you set the white and black clipping points with the Exposure and Shadow sliders.

Contrast Adjusts the midtones in an image. Higher values increase the midtone contrast, while lower values produce an image with less contrast. Generally, you use the Contrast slider to adjust the contrast of the midtones after setting the Exposure, Shadow, and Brightness values.

Saturation Adjusts the color saturation of the image from –100 (pure monochrome) to +100 (double the saturation).

Using the Sharpness slider to reduce blur

In the Detail tab of the Camera Raw dialog box, the Sharpness slider adjusts the image sharpening to provide the edge definition you wish. The Sharpness adjustment is a variation of the Photoshop Unsharp Mask filter, which locates pixels that differ from surrounding pixels based on the threshold you specify and increases the pixels' contrast by the amount you specify. When opening a camera raw image file, the Photoshop Camera Raw plug-in calculates the threshold to use based on camera model, ISO, and exposure compensation. Users can choose whether sharpening is applied to all images or just previews.

To adjust the amount of sharpening:

1 Zoom the preview image to at least 100%.

2 Move the slider to the right to increase the amount of sharpening and to the left to decrease the amount of sharpening. A zero value turns off the Camera Raw sharpening. In general, the Sharpness slider should be set to a lower value for cleaner images.

If you're not planning to edit the image extensively in Photoshop, use the Photoshop Camera Raw plug-in's Sharpness filter. However, if you plan to edit the image extensively in Photoshop, turn off the Camera Raw sharpening, and later use the sharpening filters in Photoshop as the last step after all other editing and resizing is complete.

To specify whether an image or preview is sharpened:

1 Do one of the following:

- (Windows and Mac OS) In the Advanced mode, choose Preferences from the Photoshop Camera Raw plug-in menu.
- (Mac OS) With the Camera Raw dialog box open, choose Photoshop > Preferences.

2 In the Camera Raw Preferences dialog box, choose one of the following:

All Images Applies sharpening to the camera raw image.

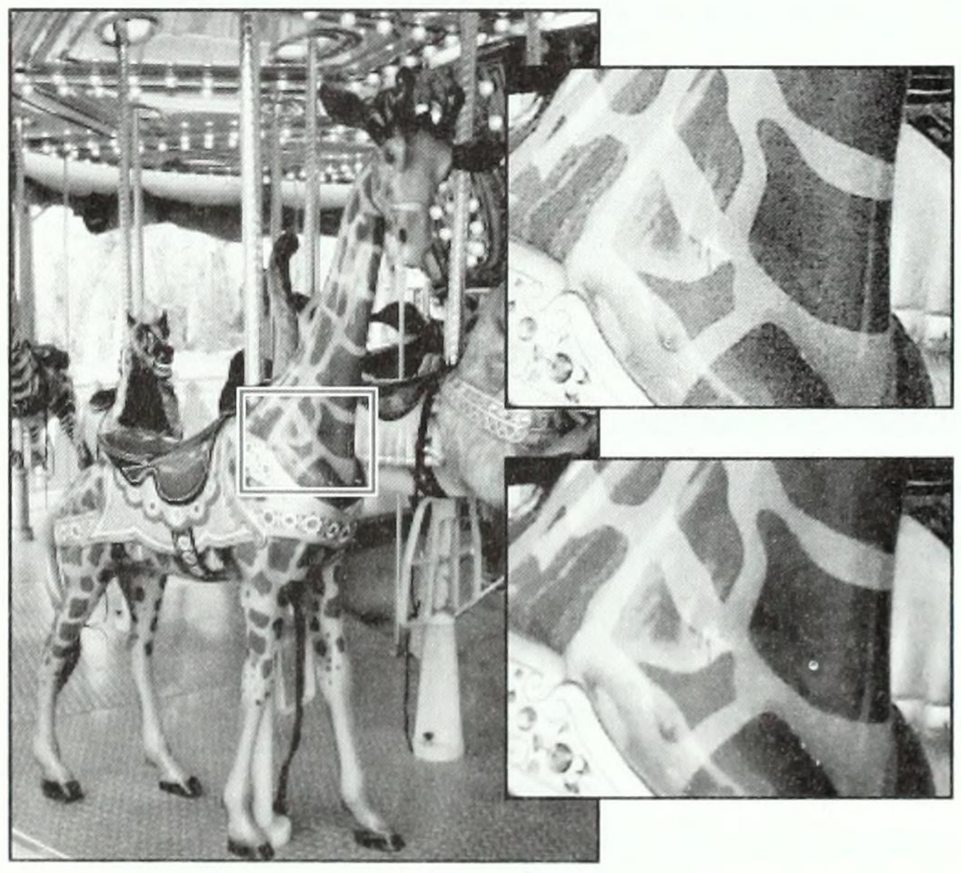
Preview Images only Applies sharpening only to the preview image and not the actual camera raw image. This option is for users who do not want to apply sharpening with the Photoshop Camera Raw plug-in.

Reducing noise

The Detail tab of the Camera Raw dialog box has controls to reduce image noise, the extraneous visible artifacts that degrade image quality. Image noise is made up of luminance (grayscale) noise, which makes an image look grainy, and chroma (color) noise, which is usually visible as colored artifacts in the image. Photographing with a higher ISO or less-sophisticated digital camera can result in images with objectionable noise.

Luminance Smoothing reduces grayscale noise, while Color Noise Reduction reduces chroma noise. Moving a slider to zero turns off its noise reduction.

When making Luminance Smoothing or Color Noise Reduction adjustments, first zoom in on the preview image for a better view.



Moving the Luminance Smoothing slider to the right reduces grayscale noise, and moving the Color Noise Reduction slider to the right reduces chroma noise.

Compensating for chromatic aberration

Chromatic Aberration is a common lens defect in which the lens focuses different frequencies (colors) of light differently. One type of chromatic aberration results in the different colors being in focus, but each color's image is a slightly different size. This type of aberration results in complementary color fringing in areas away from the center of the image. For example, the fringing can appear as a red fringe on the side of an object toward the center of the image, and cyan fringe on the side of the object away from the center of the image. The controls in the Lens tab address this problem.

To compensate for chromatic aberration:

1 Make sure the Camera Raw dialog box is in Advanced mode.

2 Zoom into an area near the corner of the preview image. For the best results, the area should contain very dark or black detail against a very light or white background. The color fringing should be visible.

3 In the Lens tab, move one or more of the following sliders:

Chromatic Aberration R/C Adjusts the size of the red channel relative to the green channel. This compensates for red/cyan color fringing.

Chromatic Aberration B/Y Adjusts the size of the blue channel relative to the green channel. This compensates for blue/yellow color fringing.

Watch the preview image as you move the slider to the left or right. If you're adjusting red/cyan color fringing, you can hold down the Alt (Windows) or Option (Mac OS) key to hide the blue/yellow color fringing. Similarly, holding down the Alt (Windows) or Option (Mac OS) key while adjusting the blue/yellow color fringing will hide the red/cyan color fringing. Your goal is to reduce the color fringing as much as possible.

Compensating for lens vignetting

Vignetting is common lens defect where the edges, especially the corners, of an image are darker than the center.

To compensate for lens vignetting:

1 Make sure the Camera Raw dialog box is in Advanced mode.

2 In the Lens tab, move the Vignetting Amount slider to the right (positive values) to lighten the corners of the image or move the slider to the left (negative values) to darken the corners of the image. You can also enter values in the Vignetting Amount text box.

3 Move the Vignetting Midpoint slider to the left (lower value) to apply the Vignetting Amount adjustment to a larger area away from the corners, or move the slider to the right (higher value) to restrict the Vignetting Amount adjustment closer to the corners. You can also enter a value in the Vignetting Midpoint text box.

Correcting a shadow color cast

Sometimes there is a remaining color cast in the shadow areas, even after the highlight white balance is adjusted using the Temperature and Tint sliders. The Calibrate tab has a Shadow Tint slider to correct this remaining shadow color cast.

To remove a color cast in the shadows:

1 Make sure the Camera Raw dialog box is in Advanced Mode.

2 In the Calibrate tab, move the Shadow Tint slider to remove the color cast in the shadows. The colors that the Shadow Tint slider adjusts depends on your camera's sensor and the white balance. Usually, moving the slider to the left (negative values) adds green to the shadow areas, and moving the slider to the right (positive values) adds magenta.

Making advanced color adjustments

Sometimes colors rendered by the Photoshop Camera Raw plug-in do not look as expected. This could be due to the difference between a camera's profile and the Photoshop Camera Raw plug-in's built in profile for the camera model. Other reasons might include photographs taken in nonstandard lighting conditions that extend outside the compensating range of the Photoshop Camera Raw plug-in. The Calibrate tab has Hue and Saturation sliders to adjust Photoshop Camera Raw plug-in's built-in camera profile to render nonneutral colors differently.

To adjust the rendering of nonneutral colors:

1 Make sure the Camera Raw dialog box is in Advanced Mode.

2 In the Calibrate tab, use the Hue and Saturation sliders to adjust the red, green, and blue in the image. Watch the preview image as you make the adjustments until the image looks correct to you. In general, first adjust the hue first and then adjust its saturation. Moving the Hue slider to the left (negative value) is like a move counterclockwise on the color wheel and moving the slider to the right (positive value) is like a move clockwise on the color wheel. Moving the Saturation slider to the left (negative value) desaturates the color and moving the slider to the right (positive value) increases the saturation.

About Photoshop Camera Raw plug-in settings

When a camera raw image file is opened with the Photoshop Camera Raw plug-in, the settings are stored in one of two places: the Camera Raw database file or a sidecar XMP file. The stored settings let Photoshop remember the setting for each individual camera raw image file. When you open a given camera raw image the next time, all the settings sliders default to the same values used the last time to open that specific camera raw image. Image attributes (target color space profile, bit depth, pixel size, and resolution) are not part of the stored settings.

You can determine where the settings are stored using the Camera Raw Preferences.

To specify where a camera raw image file's settings are stored:

1 Open the Camera Raw Preferences by doing one of the following:

- (Windows and Mac OS) In the Advanced mode, choose Preferences from the Photoshop Camera Raw plug-in menu.
- (Mac OS) With the Camera Raw dialog box open, choose Photoshop > Camera Raw Preferences.

2 In the Camera Raw Preference dialog box, choose one of the following from the Save Image Settings In menu:

Camera Raw database Stores the settings in a Camera Raw database file, generally located in the user's Application Data folder as Document and Settings/*user name*/Application Data/Adobe/CameraRaw (Windows) or the user's Preferences folder as Users/*user name*/Library/Preferences (Mac OS). This database is indexed by file content, so settings stick to the image even if the camera raw image file is renamed or moved.

Sidecar ".xmp" files Stores the settings in an XMP file in the same folder as the raw file with the same base name and an XMP extension. This option is useful for long-term archiving of raw files with their associated settings, and for the exchange of raw files with associated settings in multi-user workflows. These same sidecar XMP files can be used to store IPTC (International Press Telecommunications Council) data or other metadata associated with a camera raw image file. If you are opening camera raw files from a read-only volume like a CD or DVD, be sure to copy the files to your hard drive before opening them. The Photoshop Camera Raw plug-in cannot write an XMP file to a read-only volume and will default to writing the settings to the Camera Raw database file.

These XMP files can be viewed in the File Browser by choosing View > Unreadable Files.

Saving, applying, and updating Photoshop Camera Raw settings

You can save Photoshop Camera Raw plug-in settings for a specific camera or a specific lighting condition and reapply them on other camera raw images. You can also save a settings file that contains only a subset of the Photoshop Camera Raw plug-in settings. When this subset file is then loaded, only those sliders are updated. This lets you create settings presets for custom white balances, specific lens settings, and so forth. Using the File Browser, you can also update all or a subset of the settings applied to camera raw images.

To save Photoshop Camera Raw settings:

1 After making your adjustments in the Camera Raw dialog box, do one of the following:

- Choose Save Settings from the Photoshop Camera Raw plug-in menu ▶ to save the current settings and add them to the Settings menu. The settings will then be available to apply to another image.
- Choose Set Camera Default from the Photoshop Camera Raw plug-in menu to set a default setting for other images that come from the same camera. You can have multiple defaults for different cameras.

Make sure that you save the setting to the Camera Raw preset folder so the setting is always present in the Settings menu. Settings saved elsewhere will disappear from the Settings menu once you've chosen another setting. If this happens, you must use the Load mechanism to get the setting.

Note: *Choose Reset Camera Default from the Photoshop Camera Raw plug-in menu to return the default settings to the original Photoshop Camera Raw plug-in settings.*

To save a settings subset:

1 In the Advanced mode, choose Save Settings Subset from the Photoshop Camera Raw plug-in menu.

2 Specify the settings to be saved by doing one of the following:

- Choose an option from the Subset menu.
- Select/deselect the settings from the Settings list.

3 Click Save.

4 In the Save Raw Conversion Settings dialog box, name and save the setting subset.

To apply saved Photoshop Camera Raw settings:

In the Camera Raw dialog box, do one of the following:

- From the Settings menu, choose:

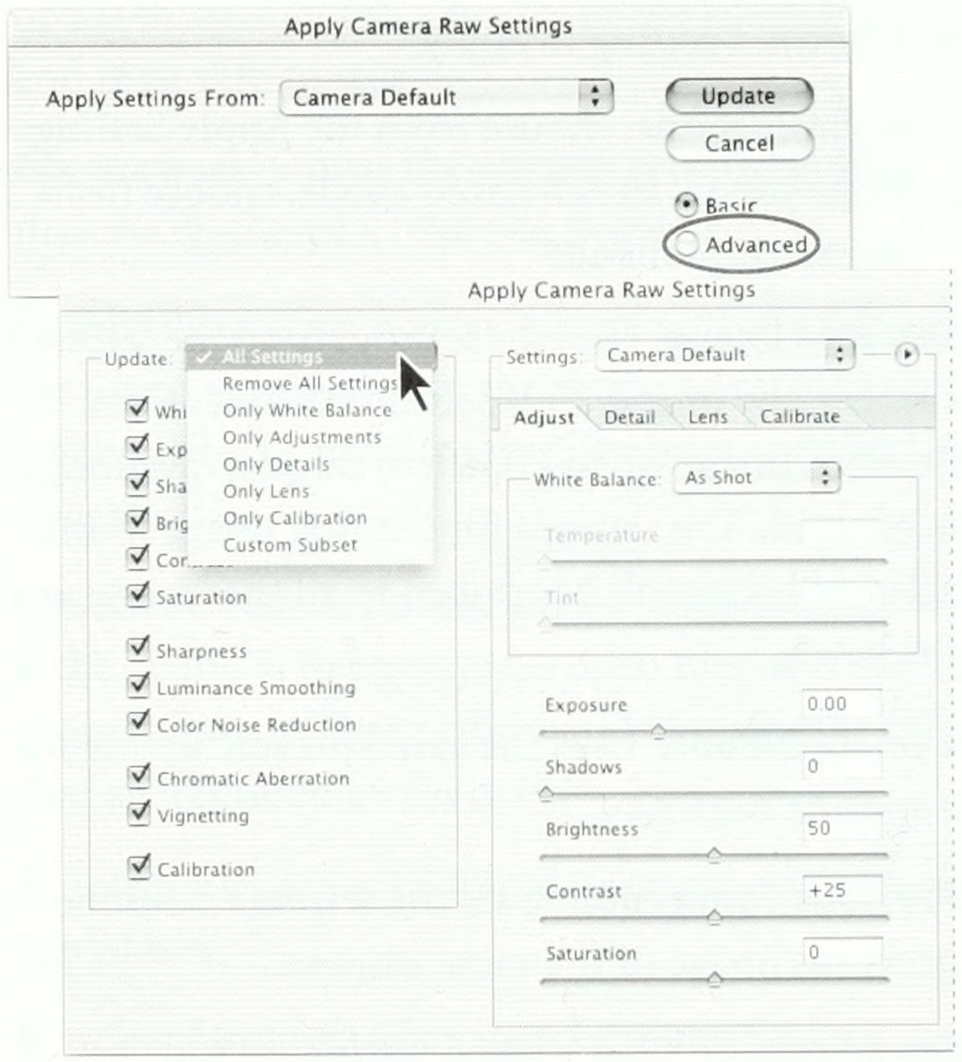
Selected Image Uses the settings from the selected camera raw image. This setting becomes First Selected Image when a batch of camera raw images is selected. The settings for the first image in the selected batch will be applied to all the images in the batch.

Camera Default Uses the saved default settings for a specific camera.

Previous Conversion Uses the settings from the previous image of the same camera.

A camera raw image file Uses the setting from a previously opened camera raw file. Up to 100 files can appear in the Settings menu.

- From the Photoshop Camera Raw plug-in menu, choose Load Settings and then select a saved setting.



Apply Camera Raw Settings dialog box in Advanced mode

To update settings applied to camera raw image files:

1 In the File Browser, select one or more camera raw image files to update.

2 Do one of the following to open the Apply Camera Raw Settings dialog box:

- From the File Browser menu, choose Automate > Apply Camera Raw Settings.
- Right-click (Windows) or Control-click (Mac OS) a selected image and choose Apply Camera Raw Settings from the context menu.

3 In the Apply Camera Raw Settings dialog box, select Advanced mode if you only want to update a subset of the settings in the selected camera raw files.

4 Choose a setting to apply:

- In Basic mode, choose from the Apply Settings From menu; in Advanced mode, choose from the Settings menu:

Selected Image Uses the settings from the selected camera raw image. This setting becomes First Selected Image when a batch of camera raw images is selected. The settings for the first image in the selected batch will be applied to all the images in the batch.

Camera Default Uses the saved default setting for a specific camera.

Previous Conversion Uses the settings from the previous image of the same camera.

Load Settings Uses a saved setting. In the Advanced mode, this option is available from the Apply Camera Raw Settings menu.

A camera raw image file Uses the setting from a previously opened camera raw file. Up to 100 files can appear in the Settings menu.

- In Advanced mode, you have the following additional option in the Apply Camera Raw Settings menu:

Reset Camera Default returns the settings to the original Photoshop Camera Raw plug-in default settings.

5 To apply a settings subset, specify the settings to update by doing one of the following in the Update area:

- Choose an option from the Update menu.
- Select/deselect the settings from the Update list.

6 Click Update. The next time you open the camera raw image file, the updated settings are applied.

If you copy and paste one or more copies of a camera raw file to your desktop, all instances of the camera raw file will be updated if either the original or a copy have their settings updated.

To delete Photoshop Camera Raw settings:

Choose Delete Current Settings from the Photoshop Camera Raw plug-in menu.

Creating an action to open camera raw image files

You can automate opening camera raw image files, editing them, and saving the files in formats like TIFF, PSD, JPEG, Large Document Format (PSB), and PDF. In Photoshop, you can also use the Batch command or Create Droplet command to open one or more camera raw image files.

To create an action to open camera raw image files:

1 In the Actions palette, click the New Action button, or choose New Action from the palette menu. Enter a name for the action.

2 Click Record. Then open a camera raw image file, and perform the operations you want to record. It's recommended to record the action with Selected Image chosen in the Settings menu of the Camera Raw dialog box so that each image's individual settings (from the Camera Raw database or XMP sidecar files) will be used when playing back the action.

If you plan to use the action with the Batch command, you may want to include a Save As operation and choose the file format to which you would like the images converted.

3 To stop recording, click the Stop button.

The action you've created can be used every time you want to open one or more camera raw image files.

For more information on creating actions, see Photoshop Help.

Important: *When you use an action to open a camera raw image file, the Photoshop Camera Raw plug-in settings are based on the settings in the dialog box when the action was recorded. You may want to create different actions for opening camera raw image files with specific settings.*

To open camera raw image files using the Batch command (Photoshop):

1 From within Photoshop, choose File > Automate > Batch.

2 In the Play area of the Batch dialog box, choose the action you created to open your camera raw image files from the Actions menu.

3 In the Source area, choose from the Source menu:

Folder Processes the images in a chosen folder. After choosing Folder from the Source menu, click Choose. In the Choose a Batch Folder dialog box, choose a folder of camera raw files.

Import Imports camera raw image files from a digital camera connected to your computer and opens them. Choose a source in the From menu and then skip to step 8.

File Browser Opens the camera raw image files that are displayed in the File Browser.

4 Select Override Action "Open" Commands so the Open commands in the action to refer to the batched files rather than the filenames specified in the action.

Deselect Override Action "Open" Commands only if the action is to operate on open files or if the action contains Open commands for specific files that are required by the action.

5 Select Include All Subfolders to process files in subfolders.

6 Select Suppress File Open Options Dialogs. This prevents the Photoshop Camera Raw dialog box from opening for each camera raw image file being processed.

7 Select Suppress Color Profile Warnings to turn off the display of color policy messages.

8 Choose a destination for the opened files from the Destination menu. It's best to choose either None to leave the files open, or Folder to save the opened files to a specific folder. This prevents accidently overwriting files.

Note: *Select Override Action "Save As" Commands if you want to use the Save As instructions from the Batch command instead of the Save As instructions in the action. If you select this option, the action must contain a a Save As command because the Batch command will not automatically save the source files. Deselect Override Action "Save As" Commands will save the files processed by the Batch command in the location specified as the destination in the Batch dialog box.*

Setting the other options in the Batch dialog box is up to your discretion.

9 Click OK after you've specified all your settings.

For more information about the Batch command, see Photoshop Help.

To create a droplet to open camera raw image files (Photoshop):

1 From within Photoshop, choose File > Automate > Create Droplet.

2 Click the Choose button in the Create Droplet dialog box and specify a location for the droplet.

3 In the Play area, select Suppress File Open Options Dialogs. This is useful for opening a batch of camera raw image files because it prevents the Camera Raw dialog box from opening for each camera raw image file being processed.

4 Choose a destination for the opened files from the Destination menu. It's best to choose either None to leave the files open or Folder to save the opened files to a specific folder. This prevents accidently overwriting files.

Setting the other options in the Create Droplet dialog box is up to your discretion.

5 Click OK after you've selected all your settings. Later, you can open single or multiple camera raw files by dragging them onto the droplet.

For more information about using droplets, see Photoshop Help.

Scanning images

Before you scan an image, make sure that the software necessary for your scanner has been installed. To ensure a high-quality scan, predetermine the scanning resolution and dynamic range your image requires. These preparatory steps can also prevent unwanted color casts from being introduced by your scanner.

For more information about scanning and eliminating color casts from scans, see Photoshop Help.

Scanner drivers are provided and supported by the manufacturers of the scanners, not Adobe Systems Incorporated. If you have problems with scanning, make sure that you are using the latest version of the appropriate scanner driver.

When scanning images, try to scan similar images together. For example, it's better to scan dark images with other dark images instead of images that are too light. You'll have better scanned output, and correcting your images will be easier.

Importing scanned images

You can import scanned images directly from any scanner that has an Photoshop-compatible plug-in module or that supports the TWAIN interface. To import the scan using a plug-in module, choose the scanner name from the File > Import submenu. See your scanner documentation for instructions on installing the scanner plug-in.

For more information on using plug-in modules, see Photoshop Help.

If your scanner does not have Photoshop-compatible scanner driver, import the scan using the TWAIN interface. (See "Importing scanned images using the TWAIN interface" on page 77.)

If you can't import the scan using the TWAIN interface, use the scanner manufacturer's software to scan your images, and save the images as TIFF, PICT, or BMP files. Then open the files in Photoshop or ImageReady.

Importing scanned images using the TWAIN interface

TWAIN is a cross-platform interface for acquiring images captured by certain scanners, digital cameras, and frame grabbers. The manufacturer of the TWAIN device must provide a Source Manager and TWAIN Data source for your device to work with Photoshop and ImageReady.

You must install the TWAIN device and its software, and restart your computer, before you can use it to import images into Photoshop and ImageReady. See the documentation provided by your device manufacturer for installation information.

To import an image using the TWAIN interface (Photoshop):

Choose File > Import, and choose the device you want to use from the submenu.

To import an image using the TWAIN interface (ImageReady):

1 If you're using the TWAIN device for the first time with ImageReady, choose File > Import > TWAIN Select. Then select the device you want to use. You do not need to repeat this step for subsequent use of the TWAIN module.

If more than one TWAIN device is installed in your system and you want to switch devices, use the TWAIN Select command.

2 To import the image, choose File > Import > TWAIN Acquire.

Importing scanned images using WIA (Windows Image Acquisition) Support

To import images from a scanner using WIA Support:

1 Choose File > Import > WIA Support.

2 Choose a destination on your computer for saving your image files.

3 Click Start.

4 Make sure Open Acquired Images in Photoshop is checked. If you have a large number of images to import, or if you want to edit the images at a later time, deselect it.

5 Make sure Unique Subfolder is selected if you want to save the imported images directly into a folder named with the current date.

6 Select the scanner that you want to use.

Note: *If the name of your scanner does not appear in the submenu, verify that the software and drivers were properly installed and that the scanner is connected.*

7 Choose the kind of image you want to scan:

- Color picture to use the default settings for scanning color images
- Grayscale picture to use the default settings for scanning grayscale images
- Black and White picture or Text to use the default settings
- Click Adjust the Quality of the Scanned Picture to use custom settings

8 Click preview to view the scan. Crop the scan if needed by pulling the rectangle so it surrounds the image.

9 Click Scan.

10 The scanned image will be saved in the BMP file format.

Creating new images

The New command lets you create a blank image. If you've copied a selection to the Clipboard, the image dimensions and resolution are automatically based on that image data.

To create a new image:

1 Choose File > New.

2 If desired, type a name for the image, and set the width and height.

(Photoshop) To match the width and height of the new image to that of any open image, choose a filename from the bottom section of the Windows menu.

3 (Photoshop) Set the resolution and mode. For more information, see "Understanding image size and resolution" on page 50.

For more information about color modes, see Photoshop Help.

4 Select an option for the contents of the background layer (Photoshop) or first layer (ImageReady) of the image:

- White to fill the background or first layer with white, the default background color.
- Background Color to fill the background or first layer with the current background color. (See "Choosing foreground and background colors" on page 179.)

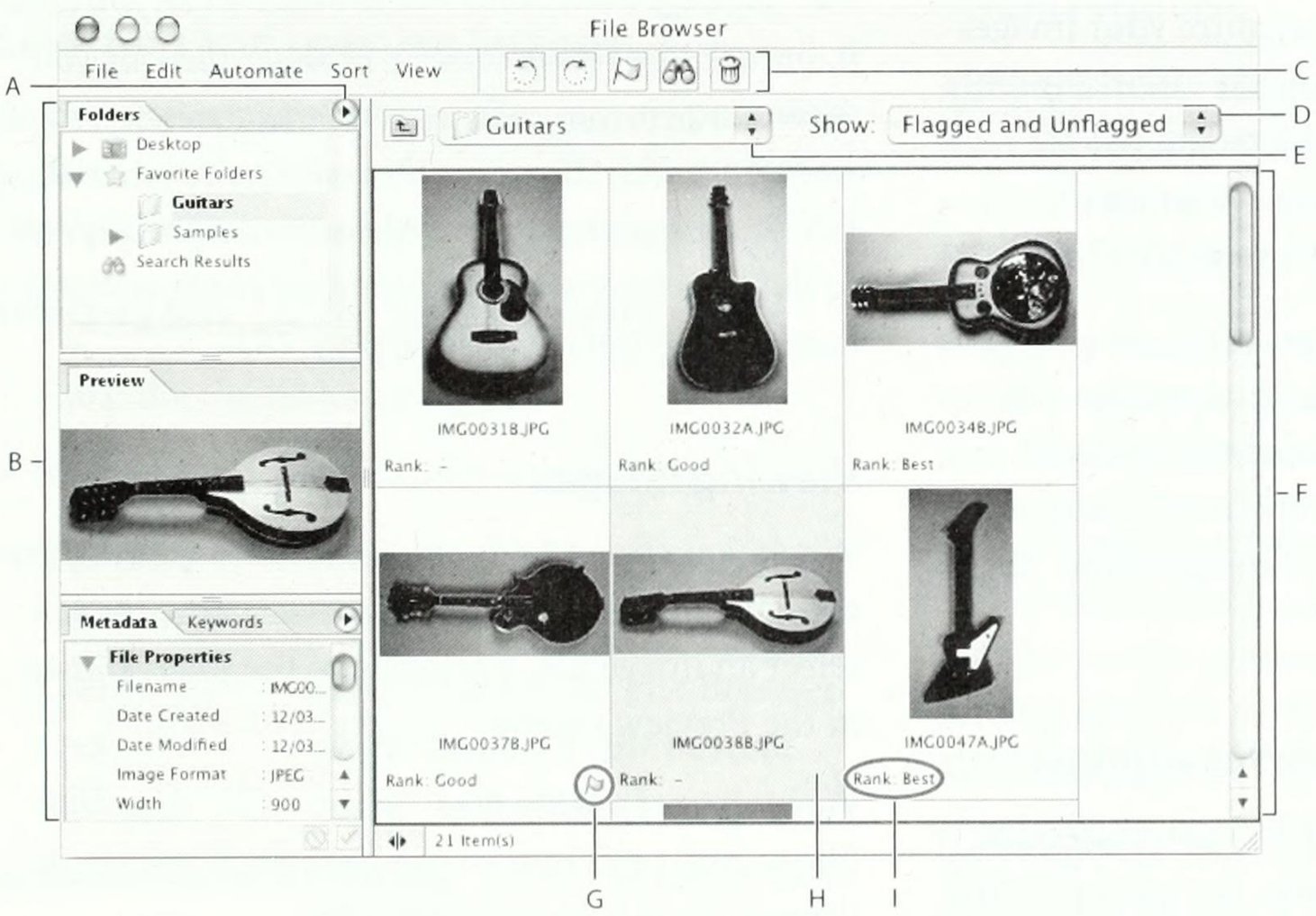
- Transparent to make the first layer transparent, with no color values. The resulting document will have a single, transparent layer as its contents.

5 Under Advanced, choose a color profile, or choose Don't Color Manage this Document. For Pixel Aspect Ratio, choose Square unless you're using the image for video. In that case, choose another option to use non-square pixels. (See "Saving images for use in video" on page 321.)

6 When you're finished, you can save the settings as a preset by clicking the Save Preset button, or you can click the OK button to open the new file.

Using the File Browser (Photoshop)

File Browser lets you view, sort, and process image files. You can use the File Browser to perform tasks such as creating new folders; renaming, moving, and deleting files; and rotating images. You can also view individual file information and data imported from your digital camera.



The Photoshop File Browser
A. *Palette pop-up menu* ***B.*** *Palettes* ***C.*** *Toolbar* ***D.*** *Display flagged and unflagged files*
E. *Location bar* ***F.*** *Main window* ***G.*** *Flag icon* ***H.*** *Selected file* ***I.*** *Rank*

About the File Browser window

The File Browser helps you to manage and organize your images. To open the File Browser, choose File > Browse or Window > File Browser, or click the File Browser button in the options bar. The File Browser window is made up of several areas.

Palettes area The palettes area contains four palettes: Folders, Preview, Metadata, and Keywords. You can use the Folders palette to navigate through the folders on your computer (see "Working with files and folders" on page 81). Thumbnails of images appear in the Preview palette (see "Viewing images" on page 80.) The Keywords palette helps you organize your images by attaching keywords to them (see "Working with keywords" on page 82). The Metadata palette contains metadata information for images (see "Working with the metadata palette" on page 86).

Toolbar At the top of the File Browser, the File Browser toolbar contains menu options and shortcut buttons to help you efficiently work with your files. The location bar is directly below the shortcut buttons.

Customizing the File Browser window

The File Browser window can be customized by moving and resizing the palettes. For example, you can resize the Preview palette to make it bigger so you can view larger thumbnails. You cannot, however, move palettes to a new area in the File Browser window, or outside of the window.

Customizing the palette display Do any combination of the following:

- Drag one palette into another to dock the palettes together.
- Drag a palette's horizontal divider bar up or down to make the palette larger or smaller.
- Drag a palette's vertical divider bar right or left to make the palette larger or smaller.
- Double-click a palette's tab to minimize it.
- Double-click a minimized palette's tab to open it.

Though Photoshop remembers the arrangement of the File Browser when you close it, once you've set up the File Browser the way you want to use it, you may want to create a new workspace. You can save other workspaces with the File Browser set up differently any number of times so that you have several customized configurations (see "Saving workspaces" on page 15).

Viewing images

When you click a folder in the Folders palette, the contents of the folder are displayed. When you select an image file, a preview of the file is shown in the Preview palette.

Viewing unreadable files To view files that Photoshop can't open (spreadsheets, for example), Choose View > Unreadable Files.

Showing and hiding folders Choose View > Folders. When this option is selected, both images and folder display.

Displaying the location of files Choose View > Reveal Location in Explorer (Windows) or View > Reveal Location in Finder (Mac OS). When you choose this command, Explorer (Windows) or Finder (Mac OS) opens the folder containing the image file on your computer.

Refreshing the view Choose View > Refresh. When you choose this command, the contents of the selected folder in the Folder palette are updated. Closing and reopening the File Browser also refreshes the view.

Choosing a view option Choose an option from the View menu.

Selecting and opening images

Before you can work with a file, you need to select it. You can select more than one file at a time. You can open files in Photoshop or in ImageReady.

Selecting files Do any of the following:

- Click the thumbnail of a file.
- Shift-click to select contiguous images.
- Ctrl-click (Windows) or Command-click (Mac OS) to select noncontinuous images
- Choose Edit > Select All from the File Browser menu bar to select all the files in the current folder.

Opening files in Photoshop Select the file or files you want to open, and do one of the following:

- Select a file and press Enter (Windows) or Return (Mac OS).
- Double-click a selected file.
- Choose Open from the palette menu.

Opening files in ImageReady Select the file or files you want to open in ImageReady, and then choose File > Edit in ImageReady.

Working with files and folders

In the File Browser, you can manage your image files by adding, deleting, and moving them. You can also add folders to the Favorite Folders list for quick access to your most frequently used folders.

The Folder palette is where you can see the folder hierarchy of the files displayed in the File Browser.

Creating new folders Choose File > New Folder. Type a name, and press Enter (Windows) or Return (Mac OS).

Adding a folder to Favorites Select a folder, and then choose File > Add Folder to Favorites. To remove a folder from Favorites, choose File > Remove Folder from Favorites.

Dragging files into the File Browser Select a file on your desktop, or in another application. Drag and drop the file into the File Browser window.

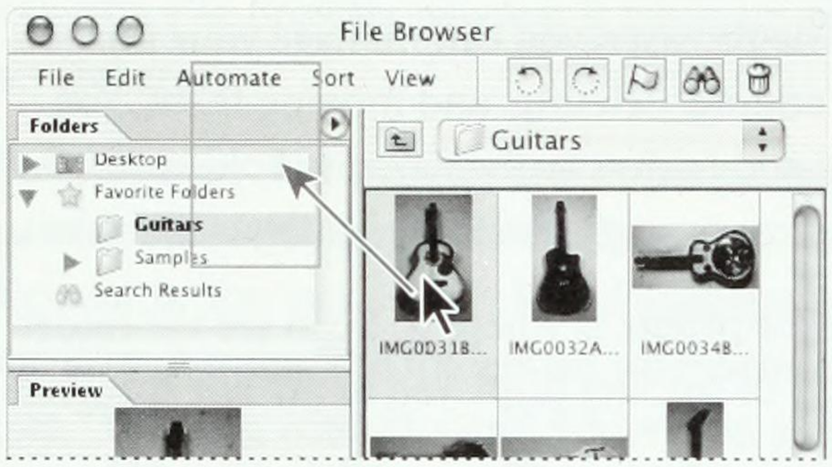
Dragging and dropping a file onto the Preview palette or the main window moves or copies the file. To view the contents of a folder, drag and drop a file or a folder on to the Preview, Metadata, or Keywords palette.

Deleting files Select the file or files you want to delete, and do one of the following

- Click the Trash button.
- Drag the files to the Trash button .
- Press the Delete key.
- Choose File > Delete.

You can also delete empty folders using the above procedure.

Moving files Select the file, and then drag it to a different folder.



Moving a file from the File Browser to the Desktop

To quickly attach an image to an e-mail message, drag the image from the File Browser and drop it into the e-mail message.

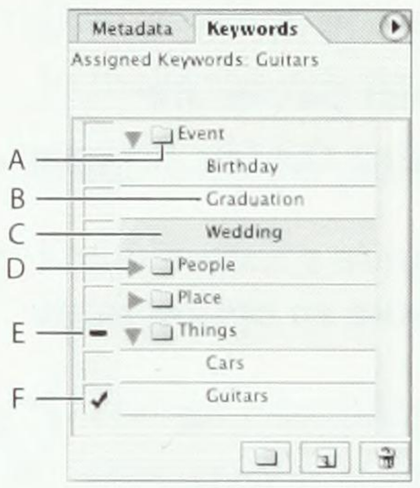
Copying files Select the file, and then Alt-drag (Windows) or Option-drag (Mac OS) it to a different folder.

Rotating files Select one or more files. To rotate the images clockwise by 90°, click the Rotate Clock Wise button or choose Edit > Rotate 90 degrees CW. To rotate the images counter-clockwise, click the Rotate Counter-Clock Wise button or choose Edit > Rotate 90 degrees CCW. To rotate the image 180°, choose Edit > Rotate 180. To complete the rotation, choose Edit > Apply Rotation.

If you don't apply the rotation, the image is rotated only in the File Browser. Be sure to choose Edit > Apply Rotation so you can open the properly rotated image in other applications.

Working with keywords

The Keyword palette lets you create and apply keywords to files. Using keywords, you can group files together by their content. You can then view groups of files using the keywords. Keywords are organized in sets called categories.



File Browser Keywords palette
***A.** Keyword group **B.** Keyword **C.** Selected keyword*
***D.** Click to show/hide content of keyword group*
***E.** Group with one or more keywords applied*
***F.** Keyword applied*

Adding keyword to files Select one or more files. In the Keywords palette, click the box next to the name of the keyword you want to add, or double-click the keyword. A check mark appears in the box next to the keyword when it's added to a file.

Adding a set of keywords to files Select one or more files. In the Keywords palette, click the box next to the name of the keyword group, or double-click the keyword group. A check mark appears in the box next to the keyword group when it's added to a file.

You may want to create a group of keywords you frequently use so you can apply them as a group.

Removing keywords from a file Select the file, and then click the box next to the name of the keyword you want to remove, or double-click the keyword.

Creating a new keyword Click the New Keyword button. Name your keyword, and then click OK.

Creating a new keyword set Click the New Keyword Set button. Name the keyword group, and then click OK.

Renaming a keyword or category Select the keyword or category and then click the inverted triangle to display the palette menu. Choose Rename from the menu, and then enter a new name for the keyword or category.

When you rename a keyword, the keyword's name isn't changed in files that currently contain it. The original name stays in the file.

Recategorizing a keyword Click and drag the keyword into another category.

Deleting a keyword Select the keyword by clicking its name, and then click the Delete Keyword button.

Keywords that you get from other users appear in the Other Keywords category until you recategorize them.

Sorting and ranking files

The File Browser allows you to sort files using several sort options. You can also sort by ascending or descending order.

Ranking lets you manually control the sort order of files. You can edit the ranking of an image.

Sorting files Choose an option from the Sort menu.

Sorting by ascending or descending order Choose Sort > Ascending Order. A check mark indicates that files are sorted in ascending order. No check mark indicates descending order.

Ranking files: Select one or more files. Choose View > Show Rank from the File Browser menu bar, and then do one of the following:

- If you're ranking one file, click the Rank text box below the image thumbnail, type a rank (containing letters or numbers), and press Enter (Windows) or Return (Mac OS).
- If you have one or more files selected, choose Edit > Rank, type a letter, and press Enter (Windows) or Return (Mac OS).

Flagging files

Flagging files is a flexible way for you to quickly reduce a large number of files into a smaller, more manageable group. You can choose to view only flagged files, or unflagged files.

For example, if you've just imported a large number of images, you can then view the files in the File Browser. You can review each new image you have, and then flag the images you want to keep. After this initial pass, you can view only files you've flagged, then drag images around to group or rank them, or apply metadata.

When you view different folders, the File Browser always shows you both Flagged and Unflagged files until you choose another option.

Flagging files Select one or more files you want to flag. Click the Flag File button. The flag icon appears at the bottom right of the thumbnail.

Unflagging files Select the flagged file, and then click the Flag File button.

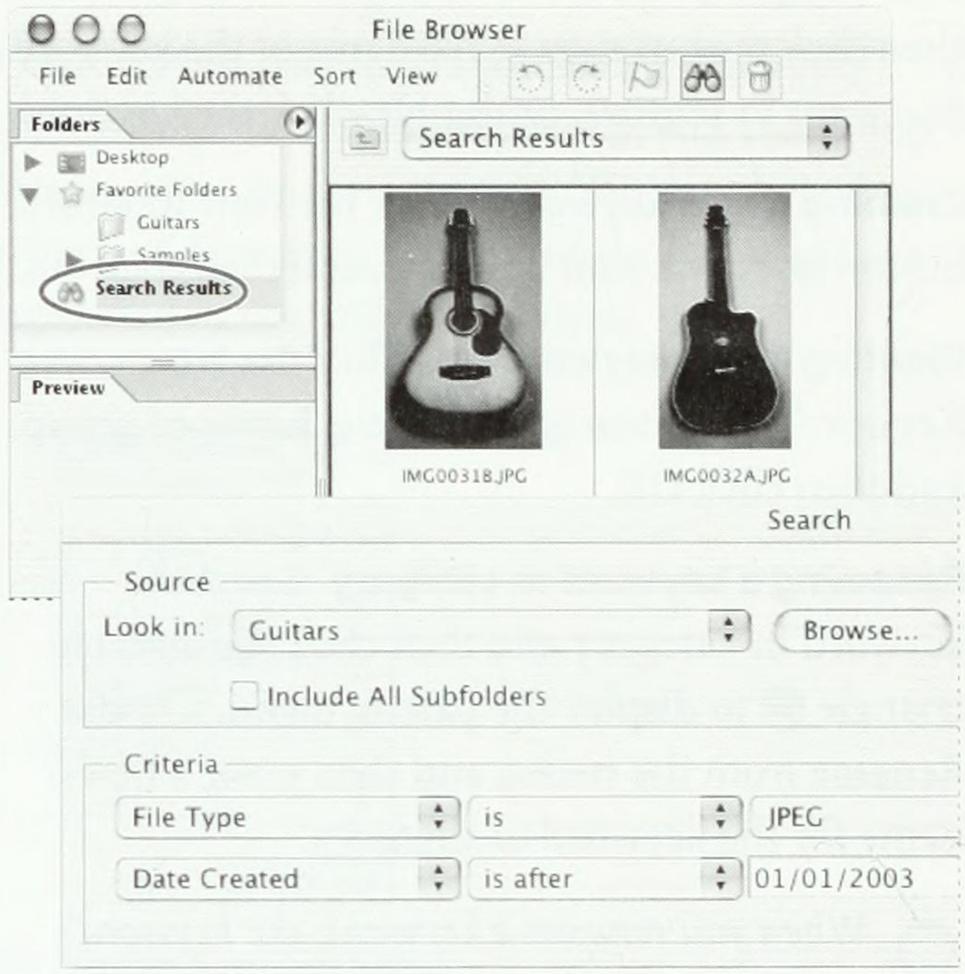
Viewing only flagged files Select Flagged Files from the Show menu next to the Location bar. You can also choose View > Flagged Files.

Viewing only unflagged files Select Unflagged Files from the Show menu, or choose View > Unflagged Files.

Viewing all files Select Flagged and Unflagged Files from the Show menu, or choose View > Flagged and Unflagged Files.

Searching for files

You can perform searches in the File Browser. You can run very specific searches, by adding up to 12 search criteria to narrow your search. Criteria limiters let you precisely target your search.



Search criteria, and results from the search

To search files:

1 Choose File > Search.

2 In the Search dialog box, choose a source folder from the Look In menu. By default, the menu displays the currently active folder. Click the Browse button to navigate to another folder.

Choose Include all Subfolders to expand the search into any subfolders located in the source folder.

3 Choose a criteria for your search by selecting an option from the leftmost menu.

4 Select a limiter from the center menu.

5 Enter text in the text box at the right, if needed.

6 To add another search criteria, click the plus sign button. To remove an empty search criteria, click the minus sign button.

7 Click the Search button.

8 The results of your search displays in the Folders palette so you can navigate through the files.

Running automated tasks from the File Browser

Commands in the Automate menu in the File Browser help you quickly produce things like picture packages and Photomerge compositions using photos you select in the File Browser. Running these tasks from the File Browser saves you a lot of time, because you don't have to open each individual file.

To run an automated task:

1 Select the files you want to use. (See "Selecting and opening images" on page 81.)

2 Choose a command from the Automate menu:

Batch Loads the Photoshop Batch dialog box so you can play an action on the folders you're viewing in the File Browser.

For more information about the Batch command, see Photoshop Help.

PDF Presentation Loads the PDF Presentation dialog box so you can use the images selected in the File Browser to create a slide show, presentation, or document in one multi-paged PDF document (see "Creating a PDF presentation" on page 315).

Contact Sheet II Starts the Contact Sheet dialog box so you can print a series of thumbnail previews on a single page (see "Creating contact sheets" on page 310).

Online Services Order prints of your images from online service providers.

To learn more about using Online Services, see Photoshop Help.

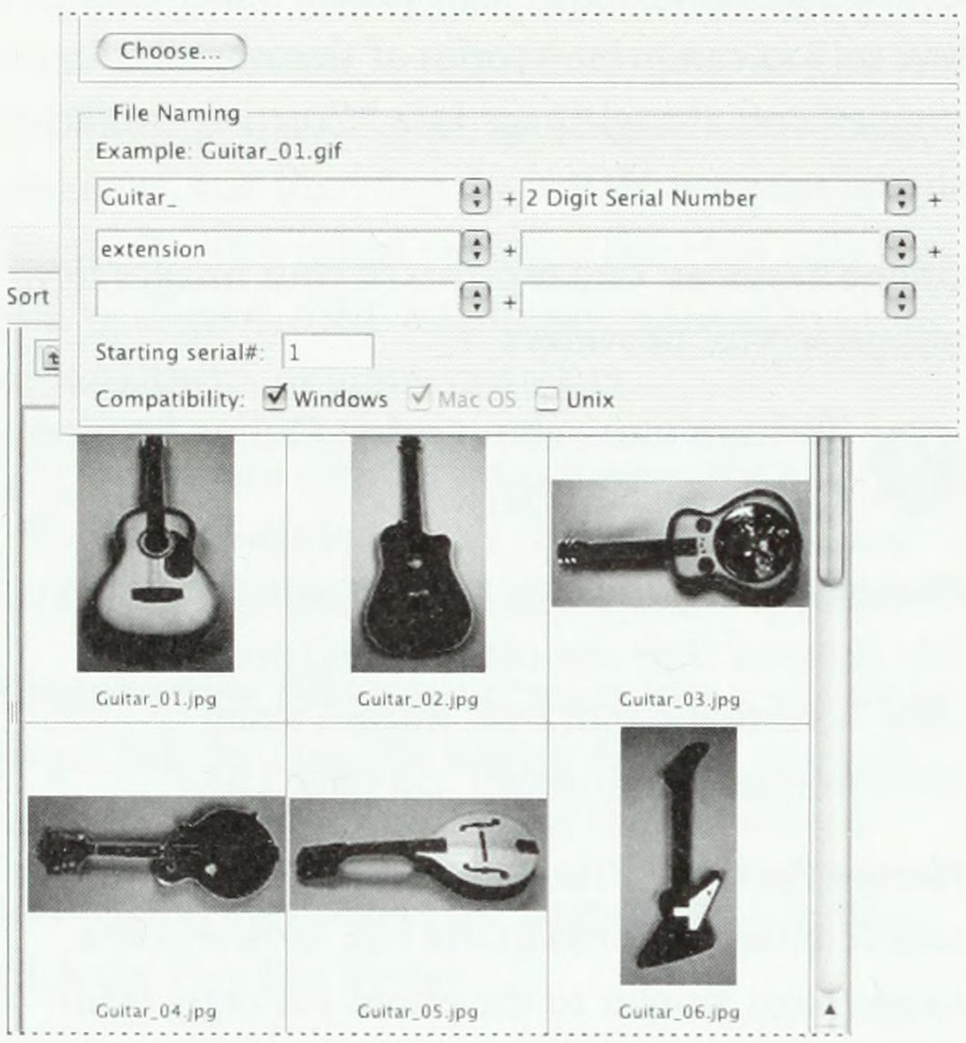
Photomerge Combines the files selected in the File Browser into one continuous image. (See "Creating panoramic images using Photomerge (Photoshop)" on page 154.)

Picture Package Prints out multiple copies of the source image selected in the File Browser on a single page, similar to the photo packages traditionally sold by portrait studios (see "Creating picture packages" on page 312).

Web Photo Gallery Automatically generate a Web photo gallery from the images you've selected in the File Browser. A Web photo gallery is a Web site that features a home page with thumbnail images and gallery pages with full-size images (see "Creating Web photo galleries (Photoshop)" on page 266).

Renaming files and folders

You can rename files and folders in the File Browser individually or in a group, or batch. When you batch rename files, you can choose the same settings for all the selected files. Batch renaming files in the File Browser can save you a lot of time.



Batch renaming files using a combination of file naming elements and text

Renaming a file or folder Select a file or folder, and then click the filename, or right-click (Windows) or Control-click (Mac OS) the file or folder to display the context menu, then choose Rename from the context menu. Type a new name, and press Enter (Windows) or Return (Mac OS).

Note: *To move to the next filename, press Tab. To move to the previous filename, press Shift+Tab.*

Batch renaming files Select the files you want to rename, or select a folder in the Folders palette. Then choose Automate > Batch Rename, and set the following options:

- For Destination Folder, select where you want to place the renamed files: in the same folder or in a different folder. If you select Move to New Folder, click Browse (Windows) or Choose (Mac OS) to select a different folder.
- For File Naming, choose elements from the menus or enter text into the fields. The specified elements and text will be combined to create the new filename.
- For Compatibility, select the operating systems with which you want renamed files to be compatible. The current operating system is selected by default, and you cannot deselect it.

Working with the metadata palette

The Metadata palette is where you can view and edit the metadata for selected files. Metadata preserves information about the contents, copyright status, origin, and history of documents, and can be used to search for files.

Metadata is increasingly important in all types of publishing. You can create metadata templates to apply to files in order to add a copyright statement, for example (see "Adding metadata to files" on page 88).

You can choose the types of metadata displayed in the Metadata in the Metadata display options dialog box.

If you have applied metadata to an Adobe Acrobat PDF file, some keywords may not appear, however, these keywords are still attached to the PDF file.

The following types of metadata appear in the File Browser's Metadata palette:

File Properties Describes the characteristics of the file, including the size, creation, and modification dates.

IPTC The only category of editable metadata, IPTC Info lets you add a caption for your files, as well as copyright information.

Camera Data (EXIF) Assigned by digital cameras, EXIF information includes the camera settings that were used when the image was taken.

GPS Displays navigational information from a Global Positioning System (GPS). Some digital cameras have GPS technology. Photos without GPS information won't have any GPS metadata.

Camera Raw Displays metadata for files in the Camera Raw format. For more information on Camera Raw, see "Working with camera raw image files" on page 61.

Edit History Keeps a log of changes made to images (see "Working with the Edit History Log" on page 30).

To view metadata:

Select a file. The metadata for the file appears in the Metadata palette. Use the scroll bars to view hidden categories.

If you have more than one file selected, metadata that is common to the files displays in the Metadata palette.

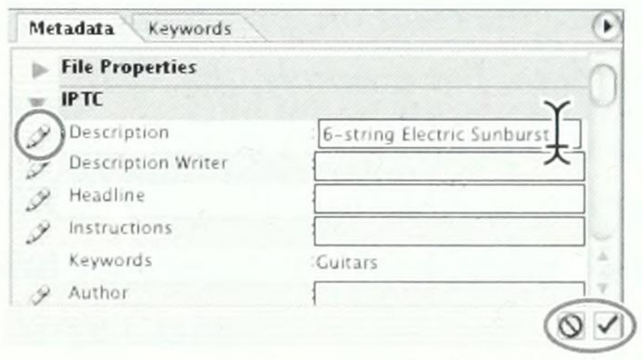
To edit IPTC metadata:

1 Click the pencil icon to the left of the metadata field you want to edit (fields without the pencil icon can't be edited).

2 Type in the text box to edit or add metadata.

3 Press Tab to move through metadata fields.

4 When you're done editing the metadata, click the Apply button ✓. To cancel any changes you've made, click the Cancel button ⊘.



Editing metadata

To customize the view of metadata:

1 Do one of the following:

- Choose Metadata Display Options from the Metadata palette menu.
- Choose Edit > Metadata Display Options.

2 In the Metadata Display Options dialog box, select or deselect metadata fields you'd like to view or hide.

3 Select the Hide Empty Fields option if you don't want to view fields with no information in them.

4 When you're done, click the OK button.

Adding metadata to files

You can add metadata to files saved in Photoshop (PSD), PDF, EPS, PNG, GIF, JPEG, and TIFF formats. The information you add is embedded in the file using XMP (eXtensible Metadata Platform). XMP facilitates the exchange of metadata between Adobe applications and across publishing workflows. For example, you can save metadata from one file as a template, and then import the metadata into other files.

The XMP Software Development Kit can be used to customize the creation, processing, and interchange of metadata. For example, the XMP SDK can be used to add fields to the File Info dialog box. More information on XMP and the XMP SDK is available from the Adobe Solutions Network.

To add metadata to a document:

1 Choose File > File Info.

2 Select a category from the list on the left side of the dialog box, enter the desired information, and click OK.

- Description to specify information about the document, such as document title, author, description, and keywords that can be used to search for the document. To specify copyright information, select Copyrighted from the Copyright Status pop-up menu. Then enter the copyright notice string and the URL of the person or company who owns the copyright.
- Origin to provide information on the history of the artwork. To enter the current date in a short text format, click Today. For Credit, enter the information needed in the credit line for a copyrighted image. Transmission Reference provides the Associated Press with information on the original transmission location of the artwork. For Urgency, specify the editorial urgency of the artwork—not its handling priority.
- Advanced to view the XMP data for the file in a structured format.

The information displayed for the following metadata categories are not editable: Camera Data 1, Camera Data 2, AP Categories, History, and Raw Data.

To save metadata as a template:

1 Click the triangle icon at the top of the File Info dialog box, and choose Save Metadata Template.

2 Enter a template name, and click Save.

To save metadata to an XMP file:

1 In the Advanced area of the File Info dialog box, click Save.

2 Type a filename, choose a location for the file, and click Save.

To import metadata into a document:

Choose File > File Info, and then do any of the following:

- Click the triangle icon at the top of the File Info dialog box, and choose a template name from the top section of the pop-up menu. The metadata from the template will replace the current metadata. To append the current metadata instead, hold down Ctrl (Windows) or Command (Mac OS) when you choose the template name.

Note: *You must save a metadata template before you can import metadata from a template.*

- In the Advanced area of the File Info dialog box, click Replace to replace the current information with information stored in an XMP file. Locate the XMP file containing the metadata you want to import, and click Open.
- In the Advanced area of the File Info dialog box, click Append to add information stored in an XMP file to the current file information. For each File Info field, if the field does not contain information, it will be updated with contents from the file. Keywords will always be appended with the information from the file.

To delete a metadata template:

1 Click the triangle icon at the top of the File Info dialog box, and choose Delete Metadata Template.

2 Select the name of the template you want to delete, and click Delete.

To show the location of metadata templates:

Click the triangle icon at the top of the File Info dialog box, and choose Show Templates.

Working with the cache

The cache stores thumbnail and file information to make loading times quicker when you return to a previously viewed folder. However, storing cache takes up disk space. You can purge the cache to free up room on your hard disk drive.

You can also export the cache. Exporting the cache allows you to burn a CD with the cache already generated.

Note: *Purging the cache deletes ranking, flag, and thumbnail information.*

Purging the cache for a folder Choose File > Purge Cache.

Purging the entire cache Choose File > Purge Entire Cache.

Exporting the cache Choose File > Export Cache. The entire cache is exported to the current folder in the File Browser.

Building the cache in subfolders Choose File > Build Cache for Subfolders. The cache for just the active folder is exported to the current folder in the File Browser.

Setting File Browser preferences

You can set the following File Browser preferences:

Do Not Process Files Larger Than Specify the maximum file seize that the File Browser processes. Large files can slow down the File Browser.

Display Most Recently Used Folders Enter a number of most recently viewed folders that appear in the location bar.

Custom Thumbnail Size Specify the pixel width of the thumbnails that appear in the Preview palette.

Allow Background Processing Select to use extra processing power to pre-generate cache information like previews and metadata.

High-Quality Previews Select to view better quality previews of images. Generating these larger previews requires more disk space for the cache.

Render Vector Files Select this option if you want the File Browser to display thumbnails of vector files, such as Illustrator files.

Parse XMP Metadata from Non-image Files Allows you to view and edit the metadata of nonimage files, such as text files.

Keep Sidecar Files with Master Files Allows you to move, copy, delete, or rename XMP and THM sidecar files along with the master file. Sidecar files help other applications process the metadata associated with a file.

Opening and importing images

You can open and import images in various file formats. The available formats appear in the File Browser, the Open dialog box, the Open As dialog box (Windows), or the Import submenu.

For more information on opening different file formats, see Photoshop Help.

Note: *Photoshop and ImageReady use plug-in modules to open and import many file formats. If a file format does not appear in the Open dialog box or in the File > Import submenu, you may need to install the format's plug-in module.*

For more information on plug-in modules, see Photoshop Help.

Opening files

You can open files using the Open command and Open Recent command. In Photoshop, you can also open files using the File Browser. For more information, see "Using the File Browser (Photoshop)" on page 79.

There may be instances when Photoshop cannot determine the correct format for a file. For example, transferring a file between Mac OS and Windows can cause the format to be mislabeled. In such cases, you must specify the correct format in which to open the file.

To open a file using the Open command:

1 Choose File > Open.

2 Select the name of the file you want to open. If the file does not appear, select the option for showing all files from the Files of Type (Windows) or Show (Mac OS) pop-up menu.

3 (Mac OS) Click Show Preview to preview the selected file. This option requires the Apple QuickTime extension.

Note: *Previews display faster if they are saved with the file. In Photoshop, select Always Save for Image Previews in the File Handling preferences to always save a preview; select Ask When Saving to save previews on a file-per-file basis.*

4 Click Open. In some cases, a dialog box appears, letting you set format-specific options.

For more information on "Opening and importing PDF files" and "Opening PostScript artwork," see Photoshop Help.

Note: *If a color profile warning message appears, specify whether to convert the pixels based on the file's color profile.*

For more information on "Calibrating and creating a profile of your monitor," see Photoshop Help.

To open a recently used file:

Choose File > Open Recent, and select a file from the submenu.

To specify the file format in which to open a file (Photoshop):

Do one of the following:

- (Windows) Choose File > Open As, and select the file you want to open. Then choose the desired format from the Open As pop-up menu, and click Open.
- (Mac OS) Choose File > Open, and choose All Documents from the Show pop-up menu. Then select the file you want to open, choose the desired file format from the Format pop-up menu, and click Open.

Important: *If the file does not open, then the chosen format may not match the file's true format, or the file may be damaged.*

Placing files

You can use the File > Place command to place artwork into a new layer in an image. In Photoshop, you can place PDF, Adobe Illustrator, and EPS files; in ImageReady, you can place files in any supported format, with the exception of Photoshop (PSD) files containing CMYK images.

To learn more about placing files, see Photoshop Help.

Chapter 3: Producing Consistent Color (Photoshop)

Whether you're preparing images to send to a client, placing a photo in a page layout, or printing an image on a desktop printer, color fidelity is important. This is especially true when your images must meet color standards set by clients and designers.

For more information on using color management to produce consistent color, see Photoshop Help.

An introduction to color management

Colors in an image will sometime look different when viewed on different monitors. They may also look very different when printed on your desktop printer or printed in a publication. If you need to produce consistent color across different devices, managing color should be an essential part of your workflow.

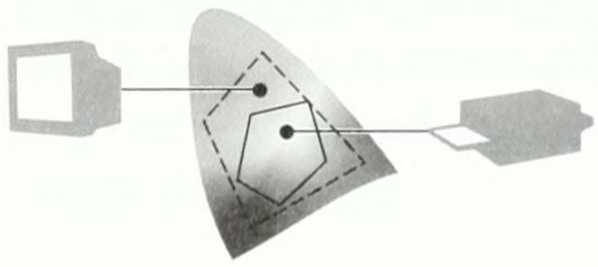
Why colors change

We use *color models* to describe the colors we see and work with. Each color model, such as RGB, CMYK, or Lab, represents a different method for describing and classifying color. Color models use numeric values to represent the visible spectrum of color. A *color space* is a variant of a *color model* and has a specific *gamut* (range) of colors. For example, within the RGB color model are a number of color spaces: Adobe RGB, sRGB, and Apple RGB. While each of these color spaces defines color using the same three axes (R, G, and B), their gamuts are different.

All devices operate within their own color space, the range of color they're capable of reproducing. No device can reproduce the full range of colors viewable to the human eye, and no two devices have the same color space.

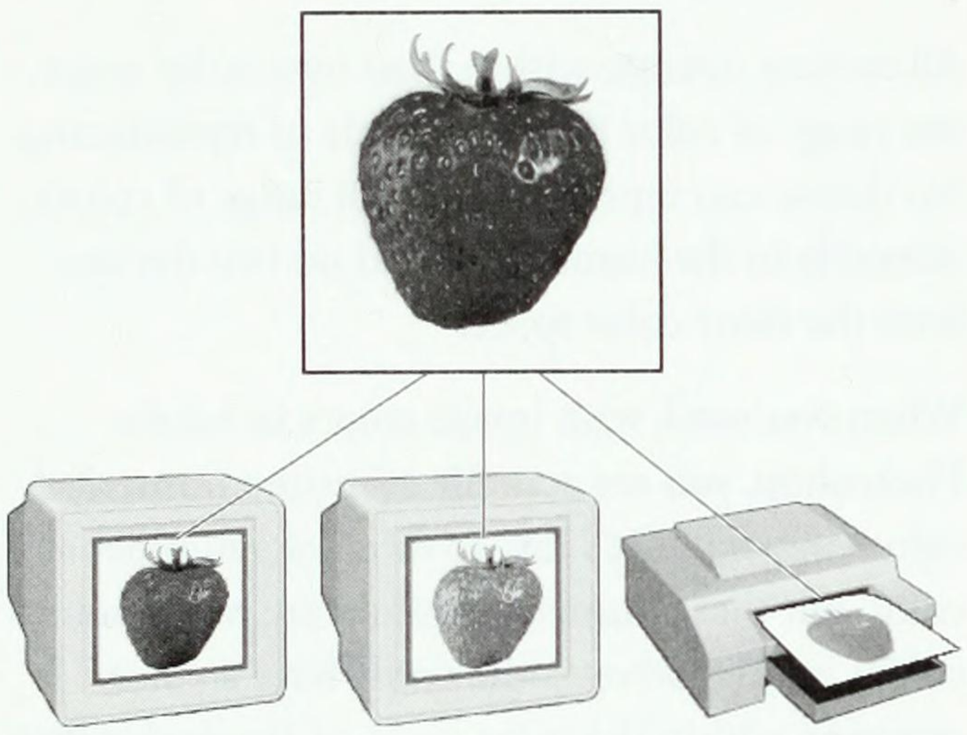
When you work with image colors in Adobe Photoshop, you are actually adjusting numerical values in the file. It's easy to think of a number as a color, but these numerical values are not absolute colors in themselves—they only have a color meaning within the color space of the device that is producing the color.

Because each device has its own color space, it can reproduce colors only in its gamut. When an image moves from one device to another, image colors may change because each device interprets the RGB or CMYK values according to its own color space.



Every device has a different color space.

It is impossible for all the colors viewed on a monitor to be identically matched in a print from a desktop printer. A printer operates in a CMYK color space, and a monitor operates in an RGB color space. Their gamuts are different. Some colors produced by inks cannot be displayed on a monitor, and some colors that can be displayed on a monitor cannot be reproduced using inks on paper.



The same RGB values interpreted differently by each device's color space

Even though it is impossible to perfectly match all colors on different devices, you can use color management to ensure that most colors are the same or similar enough so they appear consistent.

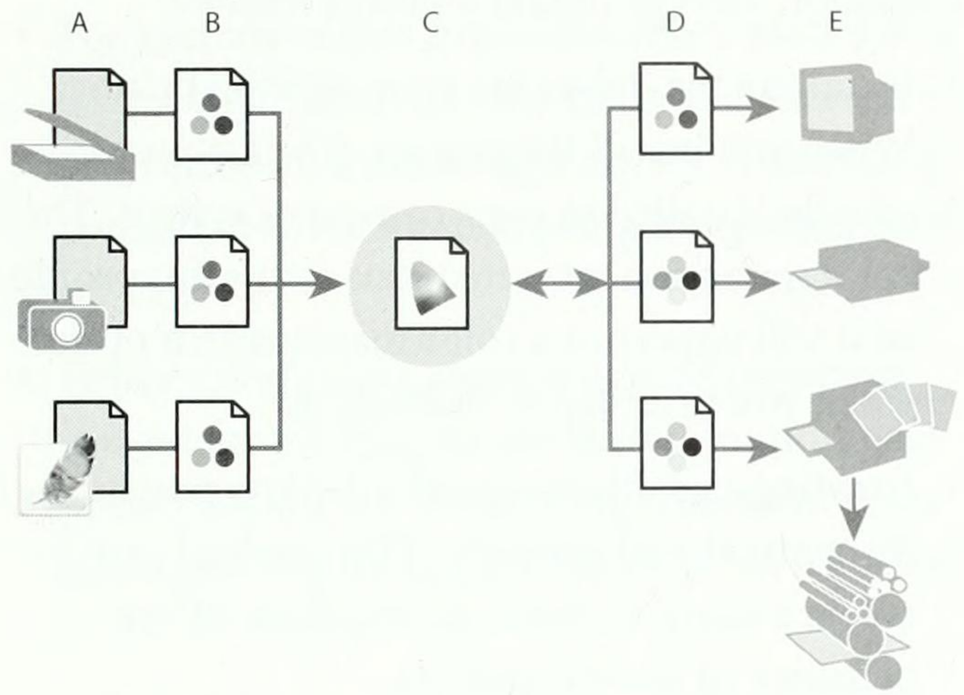
Solving color inconsistency with color management

Color management lets you produce consistent colors with a system that reconciles differences between the color spaces of each device.

For the color management system to successfully convert color values between the different color spaces so colors remain the same or very similar, three things must happen:

- The color management system must know the color space of the image so it can decipher the meaning of the color values in the image. When assigning a *profile* to an image, the image will be in the color space described by the particular profile. A document's profile can be assigned by a source device, like a digital camera or a scanner, or assigned in Photoshop.
- Then, the color management system uses a color reference to identify the *absolute* colors represented by the color values in the image. Currently, color management systems use either CIE L*a*b* (Lab) or CIE XYZ for color reference. Both color spaces describe all the colors that a person can see; the color values referred to in this space are not limited to or tied to the colors produced by any device.

- And finally, the color management system must know the color space of the destination device so it can send properly translated RGB or CMYK color values to the device. The color management system uses profiles to understand what RGB and CMYK values mean to each device. Device profiles can be supplied by the manufacturer or created using third-party software and hardware.



Color management
A. *Source devices create documents containing raw color values.* ***B.*** *Source profiles describe the devices' color spaces and document profiles describe the documents' color spaces.* ***C.*** *Taking the raw color values with the profile data, the color management system identifies the actual colors in the document using a color reference (Lab).* ***D.*** *Device profiles describe the color spaces of each device.* ***E.*** *The color management system converts the raw color values to the color space of each device.*

Basic steps for producing consistent color

A color management system is built into Photoshop. To use Photoshop's color management system successfully, you will need to follow some basic steps.

To start managing the color in your workflow:

1 Calibrate your monitor. Use a visual calibration method, like Adobe Gamma (Windows) or Monitor Calibrator (Mac OS), or use third-party software and hardware for more accurate calibration.

2 Specify the color settings when you first launch Photoshop. The color settings in the Photoshop Color Settings dialog box control how the color management system works with RGB, CMYK, and grayscale images.

When first launching Photoshop, an alert will tell you that the color settings will be configured using default settings (Web Graphics Defaults) and ask if you wish to customize the color settings. Do one of the following:

- Click *No* to accept the default settings. Keep in mind that the default settings might be appropriate for keeping colors consistent when images are viewed on a computer monitor, but may not be optimum for printing images.

Note: *Although you don't have to customize the color settings when first launching Photoshop, it's recommended that you do. The choices you make in the Color Settings dialog box influence how the colors in images are displayed.*

- For better control of the Photoshop color management system, click *Yes* to customize the color settings in Photoshop when first launching the program. This opens the Color Settings dialog box. In the Color Settings dialog box, choose a preset option from the Settings menu. If your image is to be printed on a desktop printer or a printing press, choose one of the prepress defaults that's relevant to your geographic location. For example, if you're in the United States, you would choose U.S. Prepress Defaults.
- For the maximum control of the Photoshop color management system, click *Yes* to customize the color settings in Photoshop when first launching the program. This opens the Color Settings dialog box. In the Color Settings dialog box, select the Advanced Mode option and specify the individual settings.

Note: *The Color Settings dialog box is not just accessible the first time you launch Photoshop. You can access the Color Settings dialog box at any time by choosing (Windows) Edit > Color Settings or (Mac OS) Photoshop > Color Settings.*

It is important to use the same color settings in other color-managed applications such as Adobe Illustrator, Adobe InDesign, and Adobe Acrobat® in order to make your color consistent between the applications. Keep in mind that colors will probably not match between color-managed applications and non-color-managed applications.

For more information about synchronizing color settings between color-managed Adobe applications, see Photoshop Help.

3 Create or acquire profiles of devices in your workflow, such as your desktop printer. The Photoshop color management system needs to know the behavior of the devices in your workflow in order to properly convert the color values in a document so the devices produce consistent color. Common ways to obtain a profile include:

- Installing the driver for your desktop printer. When you install the printer driver, a profile is usually installed in your computer system. The color management system can access this profile so it will appear as a color management option when you print from Photoshop.
- Creating a profile using a third-party measuring instrument and software. This method can create a more accurate descriptions of the behavior of specific devices.

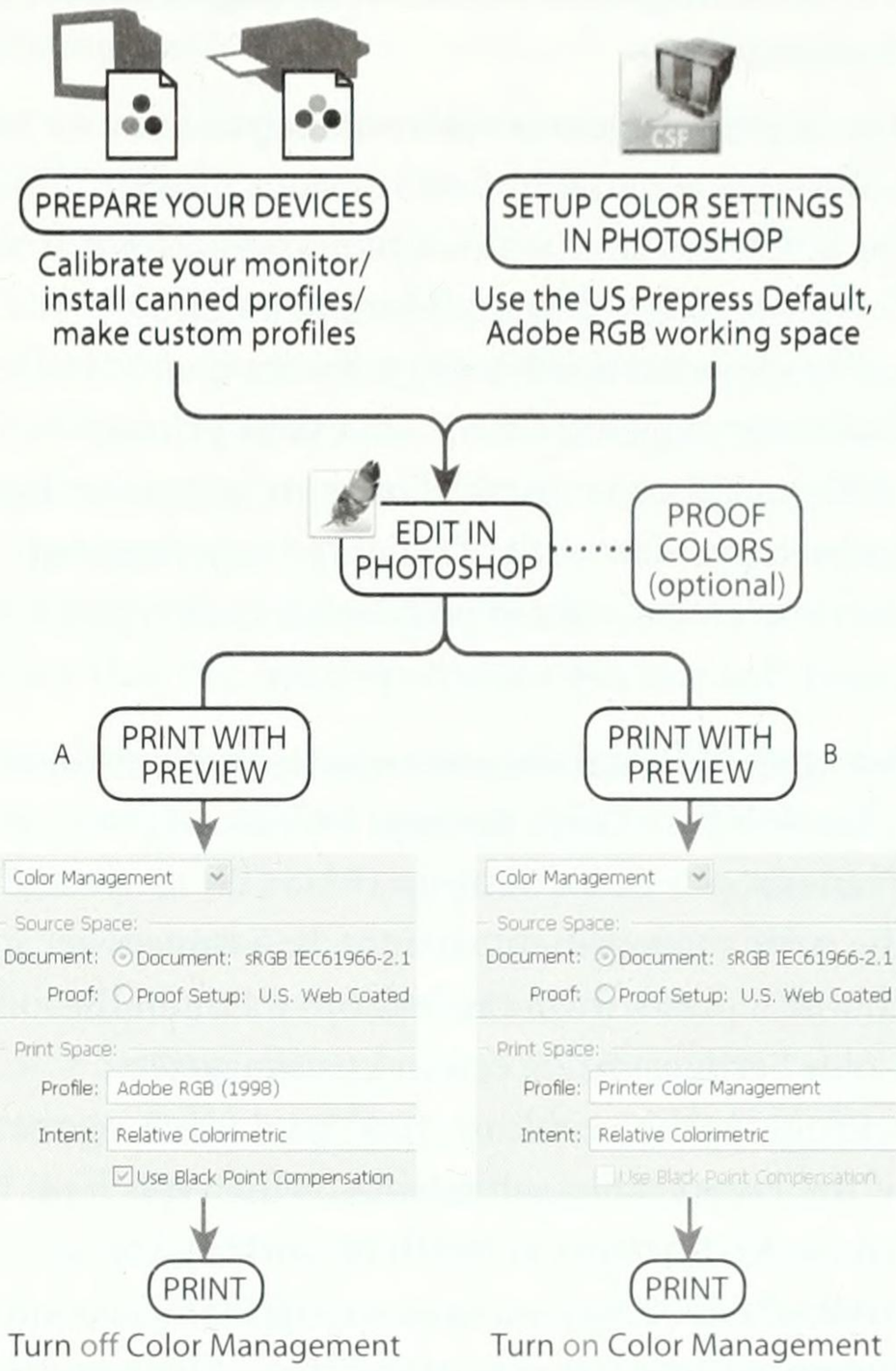
Note: *You should also make separate profiles for every type of paper used with your desktop printer. A glossy paper is capable of displaying a different range of colors than a matte paper. Use a third-party measuring instrument and software to generate custom paper profiles.*

4 Incorporate color management into your various workflows. Having a calibrated monitor and profiles is useless unless you know how to utilize them:

- For keeping colors consistent when printing to an inkjet printer, dye sublimation printer, laser printer or any desktop printer, see "Producing consistent color with a desktop printer" on page 97.
- For keeping colors consistent when placed in a layout application like InDesign and sent out to be printed on a printing press, see "Producing consistent color when sending images to press" on page 99.
- For keeping colors consistent when creating images for viewing on the Web or multimedia presentations, see "Producing consistent color when creating images for the Web" on page 100.

Producing consistent color with a desktop printer

Using a color-managed workflow, you can control the appearance of colors in your document so they remain the same or similar when the document is printed on a desktop printer.



Desktop printer workflow
A. *Photoshop handling the color management; usually a custom profile is chosen from the Profile menu* ***B.*** *Printer driver handling the color management*

To color manage your document for output on a desktop printer:

Set up your devices for color management Calibrate your monitor and create a profile for it. Use Adobe Gamma (Windows), Monitor Calibrator (Mac OS) or, for more precise calibration, use third-party software and hardware. If profiles came with your printer, make sure they're installed on your computer. For important color work, it's highly recommended that you create custom profiles for each type of paper that you use with the printer.

Set up the Photoshop color management system Choose Edit > Color Settings (Windows) or Photoshop > Color Settings (Mac OS) to specify the color management settings. You can either choose a preset from the Settings menu in the Color Settings dialog box or customize the settings. At the very least, you should choose one of the Prepress Default settings, which specifies Adobe RGB (1998) as the RGB working space. Adobe RGB (1998) is a large enough color space to encompass the colors used in printing. In general, it's not advised to use sRGB as the working space, since it's smaller and may not contain important colors that can be printed.

Edit your image in Photoshop Depending on the color management policy you choose, you will be editing the image in either the current RGB working space or in the working space profile embedded in the document. The choice of whether to convert a document to the RGB working space or preserve its embedded profile is a personal decision. For instance, if you feel that Adobe RGB is a suitable working space for all images that you print, you might consider choosing Adobe RGB as your RGB working space, and then choose the Convert to Working Space policy and always working in Adobe RGB.

(Optional) Soft proof your image If you want to see a simulation of your final printed image, use the Proof Setup command and choose the printer's profile. Your monitor will display the image in the color space of your desktop printer. For the most accurate soft proof, choose a profile for the specific paper you're printing on.

Use Print with Preview Choose File > Print with Preview. In the Print dialog box:

- Select Show More Options and choose Color Management from the pop-up menu.
- In the Source Space area, Choose Document (unless you're printing a hard copy of the soft proof).
- In the Print Space area, choose the profile of your printer or your custom profile of a specific printer/paper combination. Photoshop will handle the color management during printing. Choose Printer Color Management if your printer driver is handling the color management during printing.
- Also in the Print Space area, choose a rendering intent. Generally, Relative Colorimetric or Perceptual are the most common intents used for photographic images because they preserve the overall appearance of a document's colors when printed.

Set printer options Click the Print button in the Print dialog box (for the Print with Preview command) to open a second Print dialog box (for setting printer options). The options available in the printer options dialog box depend on the printer drivers installed on your computer. On Windows, click the Properties button to access the printer driver options. On Mac OS, use the pop-up menu to access the printer driver options. Set the print options for the quality you want. If Photoshop is handling the color adjustment or color management options during printing, turn off all printer driver color adjustment options. If not, specify the color management settings to let your printer driver handle the color management during printing. It's important not to color manage in both Photoshop and the printer driver simultaneously during printing. This results in unpredictable color.

Producing consistent color when sending images to press

Using a color-managed workflow, you can control the appearance of colors in your document so they remain the same or similar when the document is sent out to be printed on a printing press.

To color manage your document for output on a printing press:

Set up your devices for color management Calibrate your monitor and create a profile for it. Use Adobe Gamma (Windows), Monitor Calibrator (Mac OS) or, for more precise calibration, use third-party software and hardware. If profiles came with your printer, make sure they're installed on your computer. For important color work, it's highly recommended that you create custom profiles for each type of paper that you use with the printer.

Set up the Photoshop color management system Choose Edit > Color Settings (Windows) or Photoshop > Color Settings (Mac OS) to specify the color management settings. You can either choose a preset from the Settings menu in the Color Settings dialog box or customize the settings. At the very least, you should choose one of the Prepress Default settings, which specifies Adobe RGB (1998) as the RGB working space. Adobe RGB (1998) is a large enough color space to encompass the colors used in printing. In general, it's not advised to use sRGB as the working space since it's smaller and may not contain important colors that can be printed.

Synchronize the color settings between Photoshop and Illustrator or InDesign If you plan to place your Photoshop image in an Illustrator or InDesign document, make sure the color settings are synchronized using the Color Settings dialog box in each application.

For more information on keeping colors consistent between Photoshop and other Adobe applications, see Photoshop Help.

Edit your image in Photoshop Depending on the color management policy you choose, you will be editing the image in either the current RGB working space or in the working space profile embedded in the document. The choice of whether to convert a document to the RGB working space or preserve its embedded profile is a personal decision. For instance, if you feel that Adobe RGB is a suitable working space for all images that you print, you might consider choosing Adobe RGB as your RGB working space, and then choose the Convert to Working Space policy and always working in Adobe RGB.

(Optional) Place your RGB or CMYK image in Adobe InDesign or Adobe Illustrator In general, most images printed on a commercial press are not printed directly from Photoshop but from a page-layout program like Adobe InDesign or a print-savvy program like Adobe Illustrator. For more information on importing Photoshop files into Adobe InDesign or Adobe Illustrator, see Adobe InDesign Help or Adobe Illustrator Help.

(Optional) Work entirely in RGB mode Make sure the image file is tagged with the RGB working space profile. If your printer or prepress vendor uses a color management system, he or she should be able to use your file's profile to make an accurate conversion to CMYK for producing the film and printing plates.

(Optional) Convert to CMYK Work in RGB mode until you finish with your image editing. After editing, convert the image to CMYK mode and make any additional color and tonal adjustments. Be sure to check the highlight and shadow areas of the image. If necessary, use the Levels, Curves, or Hue/Saturation command to make tonal corrections. These image adjustments should be very minor. After making final adjustments, send the CMYK file to your print house or prepress.

Producing consistent color when creating images for the Web

Keeping colors consistent in images for the Web is a challenge. You have control over how your images display on your monitor, but you have no control over how they will display on other monitors. Additionally, most browsers do not recognize a document's embedded profile. They simply send the raw RGB values to your monitor. Without a profile, a computer's color management system must guess what colors a document's RGB values actually represent. Although it may seem impossible to produce consistent colors in an image for the Web, there are a few things you can do to keep the colors as consistent as possible.

To keep colors as consistent as possible in Web images:

Set up your monitor for a color-managed workflow Calibrate and profile your monitor. Use a visual calibrator like Adobe Gamma (Windows), Monitor Calibrator (Mac OS) or, for more precision, use third-party software and hardware.

Set up color management in Photoshop Choose Edit > Color Settings (Windows) or Photoshop > Color Settings (Mac OS) and specify the color management settings. You can either choose Web Graphics Defaults from the Settings menu in the Color Settings dialog box or customize the settings. If you prefer not to use the preset option, it's recommended that you at least use sRGB for your working space. sRGB is a smaller color space than Adobe RGB (1998) and supposedly represents the profile of the *average* monitor. Tagging your image with an sRGB profile increases the possibility that more monitors will correctly display the colors in your image.

(Optional) Convert the document to sRGB profile If you have an image that's tagged with a profile other than sRGB, you can convert profile to sRGB so that the colors have a chance of maintaining a consistent appearance on a wide variety of monitors. Choose Image > Mode > Convert to Profile and choose sRGB for Profile under Destination Space.

Save for Web Choose File > Save for Web. The Save for Web command gives you more control over the optimization of your image. You can specify the colors that are preserved when saving an image in GIF or PNG-8 format. In JPEG format, you have the option of embedding an ICC profile in the file. Currently, only Internet Explorer (Mac OS) and OmniWeb (Mac OS) can read embedded profiles in images if the user enables the ColorSync option in the preferences. If an image has no embedded profile, Internet Explorer (Mac OS) and OmniWeb (Mac OS) assume an sRGB profile for the image.

Chapter 4: Making Color and Tonal Adjustments

Traditional photographers use different types of film or lens filters to achieve certain color and tonal results in their photographs. They also use various tools and techniques to adjust the color and tonality of a photographic print in the darkroom. Photoshop provides a comprehensive set of tools for making color and tonal adjustments, making corrections, and sharpening the overall focus of an image. ImageReady also provides many of the basic correction tools, including Levels, Brightness/Contrast, Hue/Saturation, Variations, and Unsharp Mask.

Before making color and tonal adjustments

The powerful tools in Photoshop and ImageReady can enhance, repair, and correct the color and tonality (lightness, darkness, and contrast) in an image. Here are some items to consider before making color and tonal adjustments.

- Work with a monitor that's calibrated and profiled. For critical image editing, this is absolutely essential. Otherwise, the image you see on your monitor will look different when printed. For more information on keeping color consistent throughout your workflow, see "An introduction to color management" on page 93.
- Whenever you make a color or tonal adjustment to an image, some image information is discarded. It's best to be judicious regarding the amount of correction you apply to an image.
- (Photoshop) For critical work and maximum preservation of image data, it's best if the image you work with is 16 bits per channel (16-bit image) rather than 8 bits per channel (8-bit image). As you make tonal and color adjustments and image data is discarded, the loss of image information is more critical in an 8-bit image than a 16-bit image. Photoshop CS has improved support for 16-bit images. Generally, 16-bit images have a larger file size than 8-bit images.

Note: *If you jump back and forth between Photoshop and ImageReady, be aware that ImageReady converts 16-bit images to 8-bit for editing. Once the files are saved in ImageReady, they are permanently converted to 8-bit, and the discarded data is unrecoverable. However, if you are editing a 16-bit image in ImageReady and haven't saved it yet, you can return to Photoshop and the image will open as 16-bit without data loss.*

- Duplicate or make a copy of the image file. Working on a copy of your image preserves the original in the event you need to use the image in its original state. (See "Duplicating images" on page 31.)

- Remove any flaws such as dust spots, blemishes, and scratches from the image before making color and tonal adjustments. For more information on retouching an image, see "Retouching and repairing images" on page 146.
- (Photoshop) Plan to use adjustment layers to adjust the tonal range and color balance of your image rather than applying an adjustment directly to the image layer itself. Adjustment layers let you go back and make successive tonal adjustments without discarding data from the image layer. Keep in mind that using adjustment layers adds to the file size of the image and demands more RAM from your computer. For more information on using adjustment layers, see "Using adjustment layers and fill layers (Photoshop)" on page 223.
- (Photoshop) Open the Info or Histogram palette in Expanded view. As you evaluate and correct the image, both palettes display invaluable feedback on your adjustments. For more information on the Histogram palette, see "About the Histogram palette" on page 107.

For more information on using the Info palette, see Photoshop Help.

- You can make a selection or use a mask to confine your color and tonal adjustments to part of an image. Another method to selectively apply color and tonal adjustments is to set up your document with image components on different layers. Color and tonal adjustments are applied to only one layer at a time and will affect only the image components on the targeted layer.

Basic steps for correcting images

The following workflow overview is a starting point for correcting the tonality and color of an image.

For more information on color adjustment methods, tools, and commands, see Photoshop Help.

Note: *For some images, the use of the quick adjustment commands in Photoshop and ImageReady might give satisfactory results.*

For more information on the various Auto commands, see Photoshop Help.

To make color and tonal adjustments:

1 (Photoshop) Use the histogram to check the quality and tonal range of the image. For information on using the histogram, see "Using a histogram to view the tonal range of an image (Photoshop)" on page 106.

2 Adjust the color balance to remove unwanted color casts or to correct oversaturated or undersaturated colors.

You can choose from the following color adjustment methods:

(Photoshop) Auto Color command Quickly corrects the color balance in an image. Although its name implies an automatic adjustment, you can fine tune how the Auto Color command behaves.

(Photoshop) Match Color command Matches the color from one photo to another photo, from one layer to another layer, and from a selection in an image to another selection in the same image or different image. This command also adjusts the luminance and color range and neutralizes color casts in an image.

(Photoshop) Color Balance command Changes the overall mixture of colors in an image.

Hue/Saturation command Adjusts the hue, saturation, and lightness values of the entire image or of individual color components.

(Photoshop) Replace Color command Replaces specified colors in an image with new color values.

(Photoshop) Selective Color command Adjusts the amount of process colors in individual color components.

(Photoshop) Channel Mixer command Modifies a color channel and makes color adjustments not easily done with other color adjustment tools.

Levels command Adjusts color balance by setting the pixel distribution for individual color channels.

(Photoshop) Curves command Provides up to 14 controls points for highlight, midtone, and shadow adjustments for individual channels.

Photo Filter command Makes color adjustments by simulating the effects of photographing with a Kodak Wratten filter in front of a camera lens.

3 Adjust the tonal range.

Begin tonal corrections by adjusting the values of the extreme highlight and shadow pixels in the image, setting an overall tonal range for the image. This process is known as *setting the highlights and shadows* or *setting the white and black points.*

Setting the highlights and shadows typically redistributes the midtone pixels appropriately. However, you may need to adjust your midtones manually.

There are several different ways to set an image's tonal range:

- You can drag sliders along the histogram in the Levels dialog box.
- (Photoshop) You can adjust the shape of the graph in the Curves dialog box. This method lets you adjust any point along a 0–255 tonal scale and provides the greatest control over an image's tonal quality.
- (Photoshop) You can assign target values to the highlight and shadow pixels using either the Levels or Curves dialog box. This can help preserve important highlight and shadow details in images being sent to a printing press or laser printer. You might also need to tweak the target values after sharpening.
- Adjust the tonality in the shadow and highlight areas using the Shadow/Highlight command. This adjustment is especially useful to correct photos, where the subject is silhouetted due to strong backlighting or where the subject is a bit light from being too close to the camera flash.

4 (Optional) Make other special color adjustments.

Once you have corrected the overall color balance of your image, you can make optional adjustments to enhance colors or produce special effects.

5 Sharpen the edges of the image.

As one of the final steps, use the Unsharp Mask filter to sharpen the clarity of edges in the image. The amount of sharpening required for an image varies due to differences in quality produced by different digital cameras and scanners.

6 (Photoshop) Use the Output sliders in the Levels dialog box or the Curves dialog box to bring important details in the highlights and shadows into the gamut of an output device, like a desktop printer. Do this if your image is being sent out to a printing press and you know the characteristics of the press.

Because sharpening increases the contrast of neighboring pixels, it's possible that some pixels in critical areas might become unprintable on the press that you're sending your images to. This is why it's best to tweak the output settings after sharpening.

Using a histogram to view the tonal range of an image (Photoshop)

A *histogram* illustrates how pixels in an image are distributed by graphing the number of pixels at each color intensity level. This can show you whether the image contains enough detail in the shadows (shown in the left part of the histogram), midtones (shown in the middle), and highlights (shown in the right part) to make a good correction.

Reading a histogram

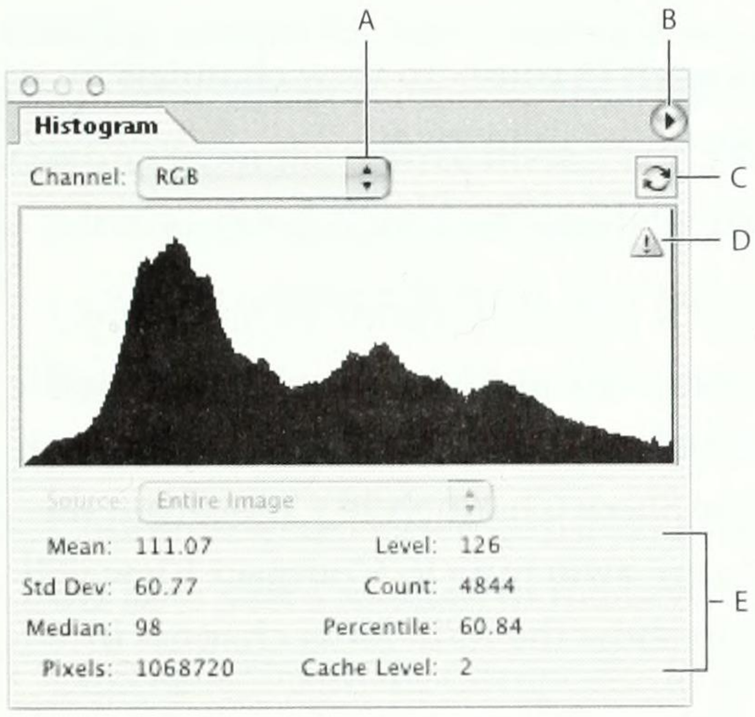
The histogram also gives a quick picture of the tonal range of the image, or the image *key type*. A low-key image has detail concentrated in the shadows; a high-key image has detail concentrated in the highlights; and an average-key image has detail concentrated in the midtones. An image with full tonal range has a number of pixels in all areas. Identifying the tonal range helps determine appropriate tonal corrections.

How to read a histogram
A. *Overexposed photo* ***B.*** *Properly exposed Photo with full tonality* ***C.*** *Underexposed photo*

About the Histogram palette

The Histogram palette offers many options for viewing tonal and color information about an image. By default, the histogram displays the tonal range of the entire image. To display histogram data for a portion of the image, first select that portion.

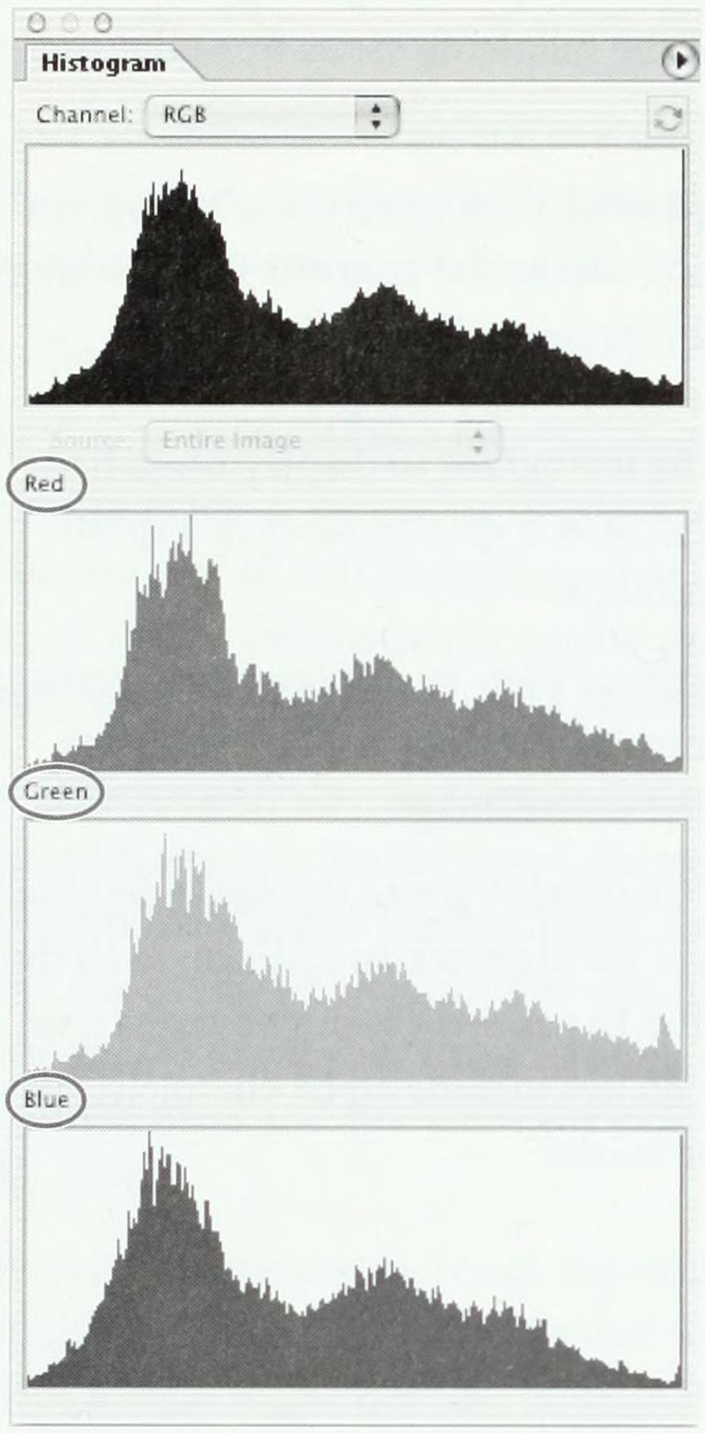
Opening the Histogram palette Choose Window > Histogram or click the Histogram tab to open the Histogram palette. By default, the Histogram palette opens in Compact View with no controls or statistics. See the following section to learn how to show the Histogram palette in different views.



Histogram palette
***A.** Channel menu **B.** Palette menu **C.** Uncached Refresh button **D.** Cached Data Warning icon **E.** Statistics*

Adjusting the view of the Histogram palette Choose one of the following views from the palette menu.

- Choose Expanded View to view the histogram with statistics, and access controls for choosing the channel represented by the histogram, viewing options in the Histogram palette, refreshing the histogram to display uncached data, and choosing a specific layer in a multi-layered document.
- Choose Compact View to display a histogram with no controls or statistics. The histogram represents the entire image.
- Choose All Channels View to display individual histograms of the channels in addition to all the options of the Expanded View. The individual histograms do not include alpha channels, spot channels, or masks.



Histogram palette with all channels displayed and statistics hidden

Viewing a specific channel If you chose the Expanded View or All Channels View, you can choose a setting from the Channel menu. The setting you choose will be remembered and displayed if you switch from either Expanded View or All Channels View back to Compact View.

- Choose an individual channel to display a histogram of the document's individual channels including color channels, alpha channels, and spot channels.
- Depending on the image's color mode, choose RGB, CMYK, or Composite to view a composite histogram of all the channels. This is the default view when first choosing Expanded View or All Channels View.
- If the image is RGB or CMYK, choose Luminosity to display a histogram representing the luminance or intensity values of the composite channel.
- If the image is RGB or CMYK, choose Colors to display a composite histogram of the individual color channels in color.

In the All Channels View, choosing from the Channels menu only affects the topmost histogram in the palette.

Viewing channels in color To view channels in color, do one of the following:

- In the All Channels View, choose Show Channels in Color from the palette menu.
- In Expanded View or All Channels View, choose an individual channel from the Channel menu and choose Show Channels in Color from the palette menu. Switching to Compact View will continue to show the individual channel in color.
- In Expanded View or All Channels View, choose Colors from the Channel menu to show a composite histogram of the channels in color. Switching to Compact View will continue to show the composite histogram in color.

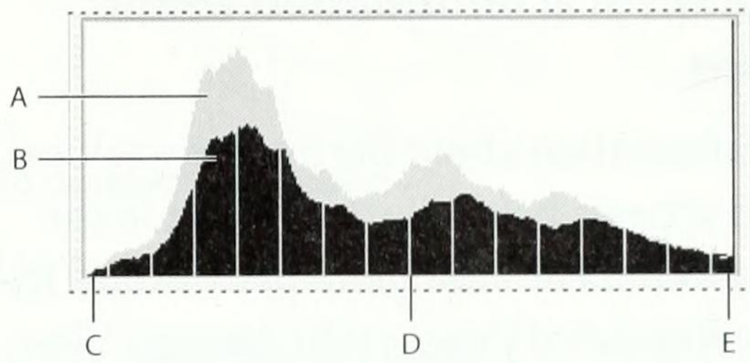
Showing and hiding statistics By default, statistics are displayed in the Expanded View and All Channels View. To hide the statistics, make sure Show Statistics is not chosen in the Histogram palette menu. For more information on statistics in the Histogram palette, see "Viewing statistical information about pixel values" on page 110.

Viewing specific statistics You can place the pointer in the histogram to view information about a specific pixel value. To view information about a range of values, drag in the histogram to highlight the range. For more information on statistics in the Histogram palette, see "Viewing statistical information about pixel values" on page 110.

Viewing options for multilayered documents If your document is multilayered, you can choose a setting from the Source menu. The Source menu is not available for single-layered documents.

- Choose Entire Image to display a histogram of the entire image including all layers in the multilayered document.
- Choose Selected Layer to display a histogram of the layer that's selected in the Layers palette.
- Choose Adjustment Composite to display a histogram of an adjustment layer selected in the Layers palette, including all the layers below the adjustment layer.

Previewing adjustments If the Preview option is selected in the dialog boxes of adjustment commands, the Histogram palette displays a preview of how the adjustment affects the histogram.



Preview of histogram adjustment in the Histogram palette
***A.** Original histogram **B.** Adjusted histogram*
***C.** Shadows **D.** Midtones **E.** Highlights*

Refreshing the histogram display When a histogram is being read from a cache instead of the document's current state, the Cached Data Warning icon ⚠ appears in the Histogram palette. Using the image cache, the histogram displays faster and is based on a representative sampling of pixels in the image. This option is enabled and the *cache level* (from 2 to 8) is specified in the Memory and Image Cache Preference. To refresh the histogram so it displays all of the pixels of the original image in its current state, do one of the following:

- Double-click anywhere in a histogram.
- Click the Cached Data Warning icon ⚠.
- Click the Uncached Refresh button ↻.
- Choose Uncached Refresh from the Histogram palette menu.

For information about cache level, see "Viewing statistical information about pixel values" on page 110.

Viewing statistical information about pixel values

Statistical information about the intensity values of the pixels appears below the histogram in the Histogram palette. The Histogram palette must be in either the Expanded View or All Channels View, and Show Statistics must be chosen from the palette menu.

The statistical information includes:

Mean Represents the average intensity value.

Standard deviation (Std Dev) Represents how widely intensity values vary.

Median Shows the middle value in the range of intensity values.

Pixels Represents the total number of pixels used to calculate the histogram.

Level Displays the intensity level of the area underneath the pointer.

Count Shows the total number of pixels corresponding to the intensity level underneath the pointer.

Percentile Displays the cumulative number of pixels at or below the level underneath the pointer. This value is expressed as a percentage of all the pixels in the image, from 0% at the far left to 100% at the far right.

Cache Level Shows the current image cache used to create the histogram. If the Use Cache for Histograms option is selected in the Memory and Image Cache preferences, the histogram displays faster and is based on a representative sampling of pixels in the image (based on the magnification), rather than on all of the pixels. The original image is cache level 1. Each level above that averages four adjacent pixels below to get a single pixel, so each level is half the dimensions (1/4 the number of pixels) of the one below. When Photoshop needs to do a quick approximation, it can just use one of the upper levels. If you want to check for posterization in the image, choose Edit > Preferences > Memory & Image Cache, and then deselect the Use Cache for Histograms option.

Chapter 5: Selecting

To modify part of an image in Adobe Photoshop or Adobe ImageReady, you first select the area you want to edit. You can move, copy, paint, or apply special effects just to the selected area without affecting the rest of your image. You can choose from a variety of specialized tools for creating selections.

About selections

There are separate sets of tools to make selections of bitmap and vector data. For example, to select bitmap pixels, you can use the marquee tools or the lasso tools.

To select vector data, you can use the pen or shape tools, which produce precise outlines called *paths*. You can convert paths to selections or convert selections to paths.

To learn more about converting selections to paths, see Photoshop Help.

Using the Select menu

You can use commands in the Select menu to select all pixels, to deselect, or to reselect.

To select all pixels on a layer within the canvas boundaries:

1 Select the layer in the Layers palette.

2 Choose Select > All.

To deselect selections:

Do one of the following:

- Choose Select > Deselect.
- If you are using the Rectangle Marquee tool, the Rounded Rectangle Marquee tool (ImageReady), the Elliptical Marquee tool, or the Lasso tool, click anywhere in the image outside the selected area.

To reselect the most recent selection:

Choose Select > Reselect.

The Color Range command selects a specified color or color subset within an existing selection or an entire image. For more information, see Photoshop Help.

Using the marquee tools

The marquee tools let you select rectangles, ellipses, rounded rectangles (ImageReady), and 1-pixel rows and columns. By default, a selection border is dragged from its corner.

To use the marquee tools:

1 Select a marquee tool:

- Rectangle Marquee ⬚ to make a rectangular selection.
- (ImageReady) Rounded Rectangle Marquee ⬚ to select a rounded rectangle such as a Web page button.

- Elliptical Marquee to make an elliptical selection.
- Single Row or Single Column Marquee to define the border as a 1-pixel-wide row or column.

2 In the options bar, specify whether to add a new selection, add to a selection, subtract from a selection, or select an area intersected by other selections.

3 Specify a feathering setting in the options bar. Turn anti-aliasing on or off for the Rounded Rectangle tool or the Elliptical Marquee tool. (See "Softening the edges of a selection" on page 118.)

4 For the Rectangle tool, the Rounded Rectangle tool, or the Elliptical Marquee tool, choose a style in the options bar:

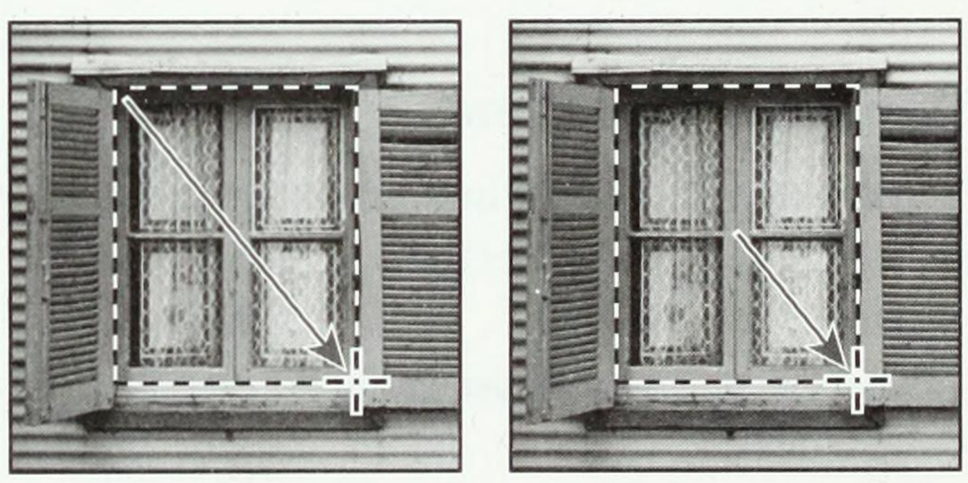
- Normal to determine marquee proportions by dragging.
- Fixed Aspect Ratio to set a height-to-width ratio. Enter values (decimal values are valid in Photoshop) for the aspect ratio. For example, to draw a marquee twice as wide as it is high, enter 2 for the width and 1 for the height.
- Fixed Size to specify set values for the marquee's height and width. Enter pixel values in whole numbers. Keep in mind that the number of pixels needed to create a 1-inch selection depends on the resolution of the image. (See "Understanding image size and resolution" on page 50.)

5 For aligning your selection to guides, a grid, slices, or document bounds, do one of the following to snap your selection:

- (Photoshop) Choose View > Snap, or choose View > Snap To and choose a command from the submenu. The marquee selection can snap to a document boundary and more than one Photoshop Extra. This is controlled in the Snap To submenu. (See "Using the Snap command" on page 124.)
- (ImageReady) Choose View > Snap To > Guides.

6 Do one of the following to make a selection:

- With the Rectangle tool, the Rounded Rectangle tool, or the Elliptical Marquee tool, drag over the area you want to select. Hold down Shift as you drag to constrain the marquee to a square or circle (release the mouse button before Shift to keep the shape contsrained). To drag a marquee from its center, hold down Alt (Windows) or Option (Mac OS) after you begin dragging.



Dragging a marquee from the corner of an image (left), and from the center of an image (right)

- With the single row or single column marquee, click near the area you want to select, and then drag the marquee to the exact location. If no marquee is visible, increase the magnification of your image view.

To reposition a rectangle, rounded rectangle, or Elliptical Marquee, first drag to create the border, keeping the mouse button depressed. Then hold down the spacebar and continue to drag. Release the spacebar, but keep the mouse button depressed, if you need to continue adjusting the selection border.

Using the Lasso, Polygonal Lasso, and Magnetic Lasso tools

The Lasso tool and the Polygonal Lasso tool let you draw both straight-edged and freehand segments of a selection border. With the Magnetic Lasso tool (Photoshop), the border snaps to the edges of defined areas in the image.

The Magnetic Lasso tool is especially useful for quickly selecting objects with complex edges set against high-contrast backgrounds.

To use the Lasso tool:

1 Select the Lasso tool , and select options. (See "Setting options for the Lasso, Polygonal Lasso, and Magnetic Lasso tools" on page 114.)

2 Drag to draw a freehand selection border.

3 To draw a straight-edged selection border, hold down Alt (Windows) or Option (Mac OS), and click where segments should begin and end. You can switch between drawing freehand and straight-edged segments.

4 To erase recently drawn segments, hold down the Delete key until you've erased the fastening points for the desired segment.

5 To close the selection border, release the mouse without holding down Alt (Windows) or Option (Mac OS).

To use the Polygonal Lasso tool:

1 Select the Polygonal Lasso tool , and select options. (See "Setting options for the Lasso, Polygonal Lasso, and Magnetic Lasso tools" on page 114.)

2 Click in the image to set the starting point.

3 Do one or more of the following:

- To draw a straight segment, position the pointer where you want the first straight segment to end, and click. Continue clicking to set endpoints for subsequent segments.
- To draw a freehand segment, hold down Alt (Windows) or Option (Mac OS), and drag. When finished, release Alt or Option and the mouse button.
- To erase recently drawn straight segments, press the Delete key.

4 Close the selection border:

- Position the Polygonal Lasso tool pointer over the starting point (a closed circle appears next to the pointer), and click.
- If the pointer is not over the starting point, double-click the Polygonal Lasso tool pointer, or Ctrl-click (Windows) or Command-click (Mac OS).

To use the Magnetic Lasso tool (Photoshop):

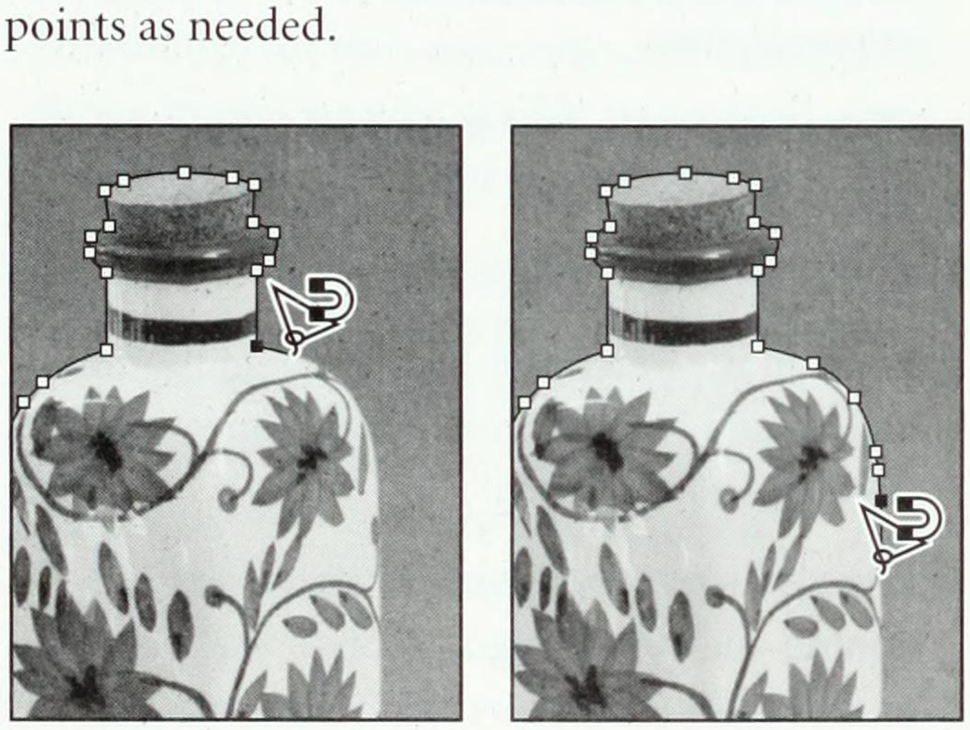
1 Select the Magnetic Lasso tool, and select options. (See "Setting options for the Lasso, Polygonal Lasso, and Magnetic Lasso tools" on page 114.)

2 Click in the image to set the first fastening point. Fastening points anchor the selection border in place.

3 To draw a freehand segment, move the pointer along the edge you want to trace. (You can also drag with the mouse button depressed.)

The most recent segment of the selection border remains active. As you move the pointer, the active segment snaps to the strongest edge in the image, based on the detection Width set in the options bar. Periodically, the Magnetic Lasso tool adds fastening points to the selection border to anchor previous segments.

4 If the border doesn't snap to the desired edge, click once to add a fastening point manually. Continue to trace the edge, and add fastening points as needed.



Fastening points anchor selection border to edges

5 To switch temporarily to the other lasso tools, do one of the following:

- To activate the Lasso tool, hold down Alt (Windows) or Option (Mac OS), and drag with the mouse button depressed.
- To activate the Polygonal Lasso tool, hold down Alt (Windows) or Option (Mac OS), and click.

6 To erase recently drawn segments and fastening points, press the Delete key until you've erased the fastening points for the desired segment.

7 Close the selection border:

- To close the border with a freehand Magnetic segment, double-click, or press Enter or Return.
- To close the border with a straight segment, hold down Alt (Windows) or Option (Mac OS), and double-click.
- To close the border, drag back over the starting point and click.

Setting options for the Lasso, Polygonal Lasso, and Magnetic Lasso tools

The Lasso tool options let you customize how the different lasso tools detect and select edges.

To set options for the lasso tools:

1 If needed, select the tool.

2 In the options bar, specify whether you want to create a new selection, add to an existing selection, subtract from a selection, or select an area intersected by other selections.

3 Specify feather and anti-aliasing options. (See "Softening the edges of a selection" on page 118.)

4 For the Magnetic Lasso tool (Photoshop), set any of these options:

- To specify a detection width, enter a pixel value for Width. The Magnetic Lasso tool detects edges only within the specified distance from the pointer.
- To specify the lasso's sensitivity to edges in the image, enter a value between 1% and 100% for Edge Contrast. A higher value detects only edges that contrast sharply with their surroundings; a lower value detects lower-contrast edges.
- To specify the rate at which the lasso sets fastening points, enter a value between 0 and 100 for Frequency. A higher value anchors the selection border in place more quickly.

On an image with well-defined edges, try a higher width and higher edge contrast, and trace the border roughly. On an image with softer edges, try a lower width and lower edge contrast, and trace the border more precisely.

- To change the lasso cursor to indicate the lasso width, press the Caps Lock key on the keyboard. Change the cursor while the tool is selected but not in use.
- If you are working with a stylus tablet, select or deselect the Stylus Pressure option. When the option is selected, an increase in stylus pressure will cause the edge width to decrease.

While creating a selection, you can press] to increase the Magnetic Lasso edge width by 1 pixel; press [to decrease the width by 1 pixel.

Using the Magic Wand tool

The Magic Wand tool lets you select a consistently colored area (for example, a red flower) without having to trace its outline. You specify the color range, or *tolerance*, for the Magic Wand tool's selection.

Note: *You cannot use the Magic Wand tool on an image in Bitmap mode.*

To use the Magic Wand tool:

1 Select the Magic Wand tool .

2 In the options bar, specify whether to add a new selection , add to an existing selection , subtract from a selection , or select an area intersected by other selections . The Magic Wand tool's cursor changes depending on which option is selected.

3 For Tolerance, enter a value in pixels, ranging from 0 to 255. Enter a low value to select the few colors very similar to the pixel you click, or enter a higher value to select a broader range of colors.

4 To define a smooth edge, select Anti-aliased. (See "Softening the edges of a selection" on page 118.)

5 To select only adjacent areas using the same colors, select Contiguous. Otherwise, all pixels using the same colors will be selected.

6 To select colors using data from all the visible layers, select Use All Layers. Otherwise, the Magic Wand tool selects colors from the active layer only.

7 In the image, click the color you want to select. If Contiguous is selected, all adjacent pixels within the tolerance range are selected. Otherwise, all pixels in the tolerance range are selected.

Creating selections from slices (ImageReady)

If you create a slice in ImageReady, it can be converted into a selection.

To create a selection from a slice:

1 Select a slice. (See "Selecting slices" on page 250.)

2 Choose Select > Create Selection from Slice.

Adjusting pixel selections

You can adjust and refine your pixel selections using the selection tools and a variety of commands in the Select menu.

In addition, you can apply geometric transformations to change the shape of a selection border. (See "Transforming objects" on page 141.)

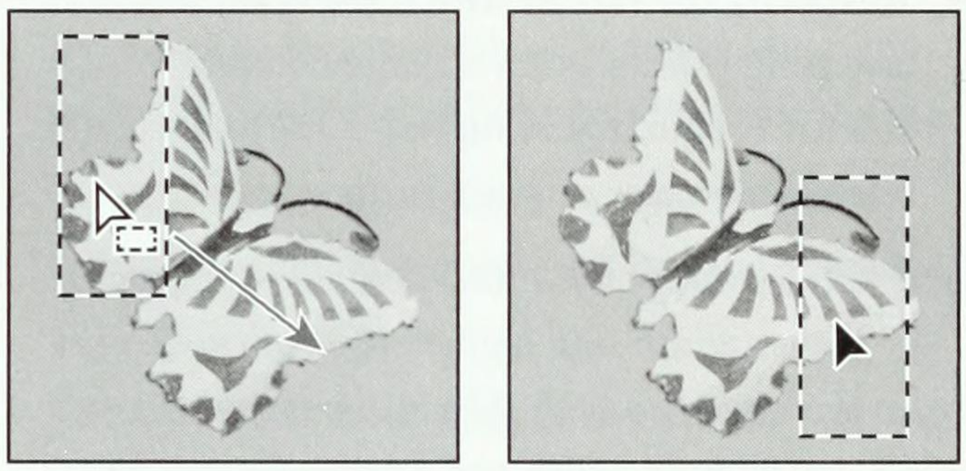
Moving, hiding, or inverting a selection

You can move a selection border around an image, hide a selection border, and invert a selection so that the previously unselected part of the image is selected.

To move a selection border:

1 Using any selection tool, select new selection from the options bar, and position the pointer inside the selection border. The pointer changes to indicate that you can move the selection.

2 Drag the border to enclose a different area of the image. You can drag a selection border partly beyond the canvas boundaries. When you drag it back, the original border reappears intact. You can also drag the selection border to another image window.



Original selection border (left), and selection border moved (right)

To control the movement of a selection:

- To constrain the direction to multiples of 45°, begin dragging, and then hold down Shift as you continue to drag.
- To move the selection in 1-pixel increments, use an arrow key.
- To move the selection in 10-pixel increments, hold down Shift, and use an arrow key.

To hide or show selection edges:

Do one of the following:

- Choose View > Extras. This command also shows or hides (Photoshop) selection edges, grids, guides, target path, slices, and annotations, or (ImageReady) selection edges, layer edges, grids, guides, smart guides, slices, auto slices, image maps, and text selections. (See "Working with Extras" on page 36.)
- Choose View > Show > Selection Edges. This toggles the view of the selection edges and affects the current selection only. The selection edges reappear when you make a different selection.

To select the unselected parts of an image:

Choose Select > Inverse.

You can use this option to select an object placed against a solid-colored background. Select the background using the Magic Wand tool and then inverse the selection.

Adjusting selections manually

You can use the selection tools to add to or subtract from existing pixel selections.

Before manually adding to or subtracting from a selection, set the feather and anti-aliased values in the options bar to the same settings used for the original selection. (See "Softening the edges of a selection" on page 118.)

For information on adjusting selections numerically, see Photoshop Help.

To add to a selection or select an additional area:

1 Make a selection.

2 Using any selection tool, do one of the following

- Select the Add to Selection option in the options bar, and drag.
- Hold down Shift, and drag to add another selection.

A plus sign appears next to the pointer when you're adding to a selection.

To subtract from a selection:

1 Make a selection.

2 Using any selection tool, do one of the following:

- Select the Subtract from Selection option in the options bar, and drag to intersect with other selections.
- Hold down Alt (Windows) or Option (Mac OS), and drag to subtract another selection.

A minus sign appears next to the pointer when you're subtracting from a selection.

To select only an area intersected by other selections:

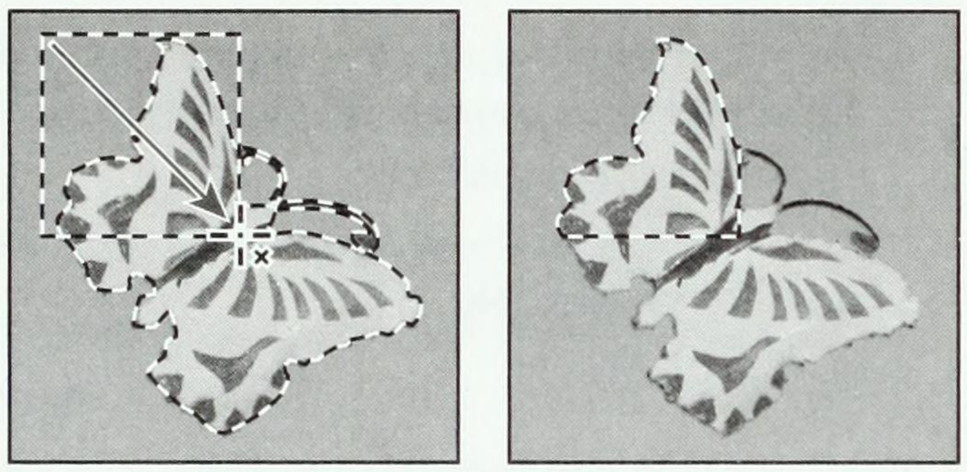
1 Make a selection.

2 Using any selection tool, do one of the following:

- Select the Intersect with Selection option in the options bar, and drag.

- Hold down Alt+Shift (Windows) or Option+Shift (Mac OS) and drag over the portion of the original selection that you want to select.

An "x" appears next to the pointer when you're selecting an intersected area.



Intersected selections

Softening the edges of a selection

You can smooth the hard edges of a selection by anti-aliasing and by feathering.

Anti-aliasing Smooths the jagged edges of a selection by softening the color transition between edge pixels and background pixels. Since only the edge pixels change, no detail is lost. Anti-aliasing is useful when cutting, copying, and pasting selections to create composite images.

Anti-aliasing is available for the Lasso tool, the Polygonal Lasso tool, the Magnetic Lasso tool, the Rounded Rectangle Marquee tool (ImageReady), the Elliptical Marquee tool, and the Magic Wand tool. (Select a tool to display its options bar.) You must specify this option before using these tools. Once a selection is made, you cannot add anti-aliasing.

Feathering Blurs edges by building a transition boundary between the selection and its surrounding pixels. This blurring can cause some loss of detail at the edge of the selection.

You can define feathering for the Marquee tool, the Lasso tool, the Polygonal Lasso tool, or the Magnetic Lasso tool as you use the tool, or you can add feathering to an existing selection. Feathering effects become apparent when you move, cut, copy, or fill the selection.

To use anti-aliasing:

1 Select the Lasso tool, the Polygonal Lasso tool, the Magnetic Lasso tool, the Rounded Rectangle Marquee tool (ImageReady), the Elliptical Marquee tool, or the Magic Wand tool.

2 Select Anti-aliased in the options bar.

To define a feathered edge for a selection tool:

1 Select any of the lasso or marquee tools.

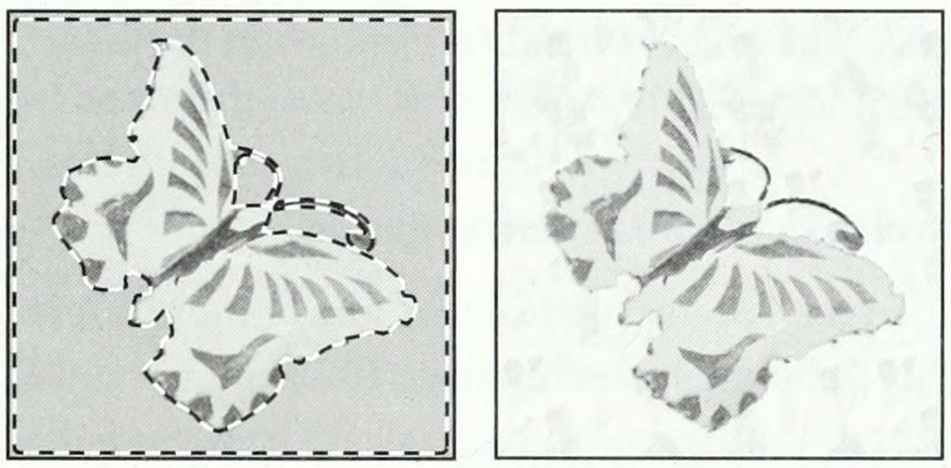
2 Enter a Feather value in the options bar.
This value defines the width of the feathered edge and can range from 0 to 250 pixels.

To define a feathered edge for an existing selection:

1 Choose Select > Feather.

2 Enter a value for the Feather Radius, and click OK.

Note: *A small selection made with a large feather radius may be so faint that its edges are invisible and thus not selectable. If a message appears stating "No pixels are more than 50% selected," either decrease the feather radius or increase the selection's size. Or click OK to accept the mask at its current setting and create a selection in which you cannot see the edges.*



Selection without feathering and with feathering
A. *Selection with no feather, same selection filled with pattern* ***B.*** *Selection with feather, same selection filled with pattern*

Moving, copying, and pasting selections and layers

You can move or copy selections and layers within or between images—and also between images in other applications.

Moving selections and layers within an image

The Move tool lets you drag a selection or layer to a new location in the image. With the Info palette open, you can track the exact distance of the move. You can also use the Move tool to align selections and layers and distribute layers within an image. To move objects in ImageReady layers, see "Selecting layers" on page 196.

To specify Move tool options:

1 Select the Move tool .

2 Select any of the following in the options bar:

- Auto Select Layer to select the topmost layer that has pixels under the Move tool, rather than the selected layer.
- Show Bounding Box to display the bounding box around the selected item.

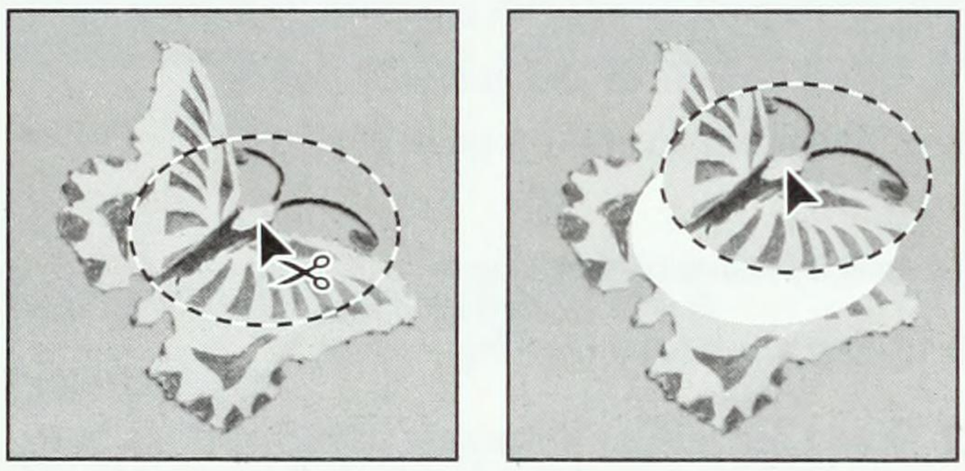
To move a selection or layer:

1 Select the Move tool .

To activate the Move tool when another tool is selected, hold down Ctrl (Windows) or Command (Mac OS). (This technique does not work with the Pen tool, the Freeform Pen tool, the Path Selection tool, the Direct Selection tool, the Hand tool, the Slice Select tool, or the anchor point tools.)

2 Do one of the following:

- Move the pointer inside the selection border, and drag the selection to a new position. If you have selected multiple areas, all move as you drag.



Original selection (left), and after the selection is moved with the Move tool (right)

- Select the layer you want to move. Then drag the layer to a new position.

To align selections and layers within an image:

1 Do one of the following:

- To align the content of a layer to a selection, make a selection in the image. Then select a layer in the Layers palette.
- To align the contents of multiple layers to a selection border, make a selection in the image. Then link together the layers you want to align in the Layers palette. (See "Linking layers" on page 200.
- To align the contents of layers with the content of the active layer, link the layers you want to align to the active layer. (See "Linking layers" on page 200.)

2 Select the Move tool.

3 Click one or more alignment buttons in the options bar: Align Top Edges, Align Vertical Centers, Align Bottom Edges, Align Left Edges, Align Horizontal Centers, or Align Right Edges.

To distribute layers within an image:

1 In the Layers palette, link three or more layers. (See "Linking layers" on page 200.)

2 Select the Move tool.

3 Click one or more Distribute buttons in the options bar: Distribute Top Edges, Distribute Vertical Centers, Distribute Bottom Edges, Distribute Left Edges, Distribute Horizontal Centers, or Distribute Right Edges.

Copying selections or layers

You can use the Move tool to copy selections as you drag them within or between images, or you can copy and move selections using the Copy, Copy Merged, Cut, and Paste commands. Dragging with the Move tool saves memory because the Clipboard is not used as it is with the Copy, Copy Merged, Cut, and Paste commands.

- The Copy command copies the selected area on the active layer.
- The Copy Merged command makes a merged copy of all the visible layers in the selected area.
- The Paste command pastes a cut or copied selection into another part of the image or into another image as a new layer. If you have a selection, the Paste command places the copied selection over the current selection. Without an active selection, Paste places the copied selection in the middle of the view area.
- (Photoshop) The Paste Into command pastes a cut or copied selection inside another selection in the same image or different image. The source selection is pasted onto a new layer, and the destination selection border is converted into a layer mask. (See "Masking layers" on page 229.)

Keep in mind that when a selection or layer is pasted between images with different resolutions, the pasted data retains its pixel dimensions. This can make the pasted portion appear out of proportion to the new image. Use the Image Size command to make the source and destination images the same resolution before copying and pasting (see "Determining a recommended resolution for an image (Photoshop)" on page 59), and then set the zoom of both images to the same magnification.

Depending on your color management settings and the color profile associated with the file (or imported data), you may be prompted to specify how to handle color information in the file (or imported data).

For more information on working with Photoshop color settings, see Photoshop Help.

To copy a selection:

1 Select the area you want to copy.

2 Choose Edit > Copy or Edit > Copy Merged.

To copy a selection while dragging:

1 Select the Move tool , or hold down Ctrl (Windows) or Command (Mac OS) to activate the Move tool.

2 Hold down Alt (Windows) or Option (Mac OS), and drag the selection you want to copy and move.

When copying between images, drag the selection from the active image window into the destination image window. If nothing is selected, the entire active layer is copied. As you drag the selection over another image window, a border highlights the window if you can drop the selection into it.

To create multiple copies of a selection within an image:

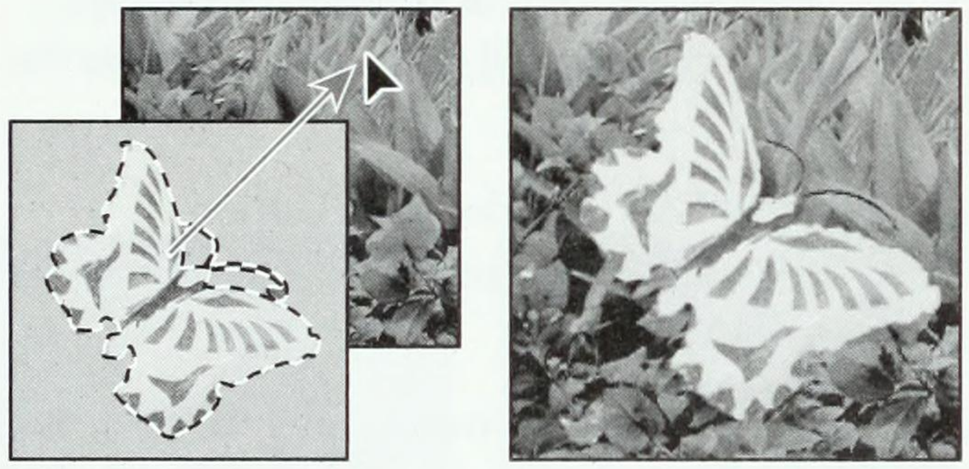
1 Select the Move tool , or hold down Ctrl (Windows) or Command (Mac OS) to activate the Move tool.

2 Copy the selection:

- Hold down Alt (Windows) or Option (Mac OS), and drag the selection.
- To copy the selection and offset the duplicate by 1 pixel, hold down Alt or Option, and press an arrow key.

- To copy the selection and offset the duplicate by 10 pixels, press Alt+Shift (Windows) or Option+Shift (Mac OS), and press an arrow key.

As long as you hold down Alt or Option, each press of an arrow key creates a copy of the selection and offsets it by the specified distance from the last duplicate. In this case, the copy isn't made on a new layer.



Dragging a selection into another image

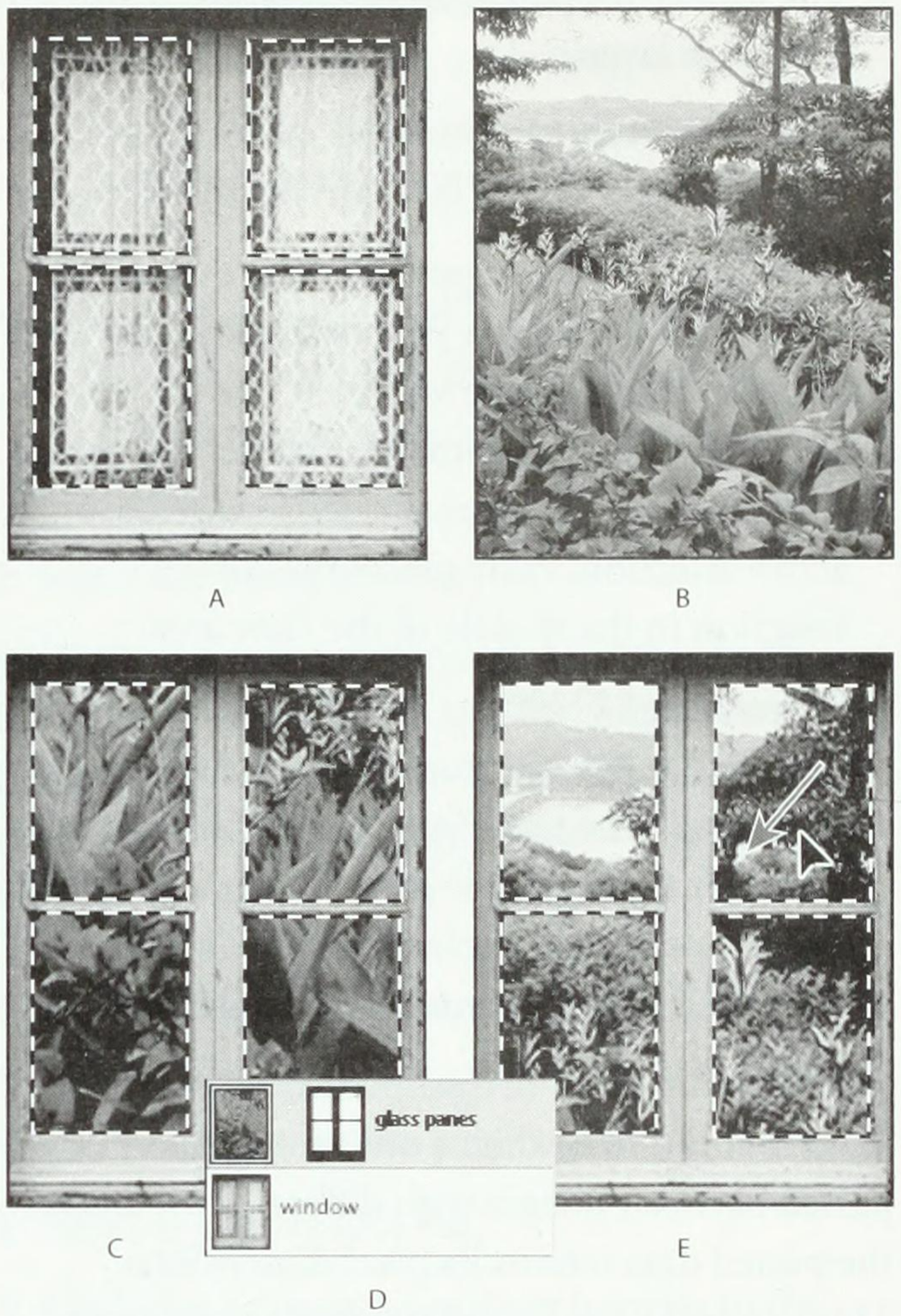
To paste one selection into another (Photoshop):

1 Cut or copy the part of the image you want to paste.

2 Select the part of the image into which you want to paste the selection. The source selection and the destination selection can be in the same image or in two different Photoshop images.

3 Choose Edit > Paste Into. The contents of the source selection appear masked by the destination selection.

In the Layers palette, the layer thumbnail for the source selection appears next to the layer mask thumbnail for the destination selection. The layer and layer mask are unlinked—that is, you can move each one independently.



Using the Paste Into command
***A.** Window panes selected **B.** Copied image **C.** Paste Into command **D.** Layer thumbnails and layer mask in Layers palette **E.** Pasted image repositioned*

For more information on editing layer masks, see "Applying and discarding layer masks" on page 233.

4 Select the Move tool , or hold down the Ctrl (Windows) or Command (Mac OS) key to activate the Move tool. Then drag the source contents until the part you want appears through the mask.

5 To reveal more or less of the image underlying the layer, click the layer mask thumbnail in the Layers palette, select a painting tool, and edit the mask:

- To hide more of the image underlying the layer, paint the mask with black.
- To reveal more of the image underlying the layer, paint the mask with white.
- To partially reveal the image underlying the layer, paint the mask with gray.

6 If you are satisfied with your results, you can choose Layer > Merge Down to merge the new layer and layer mask with the underlying layer and make the changes permanent.

Using drag and drop to copy between applications

The drag-and-drop feature lets you copy and move images between Photoshop or ImageReady and other applications.

In Windows, the application must be OLE-compliant. To duplicate an entire image by dragging and dropping, use the Move tool to drag the image. To copy an OLE object that contains PSD data, use the OLE Clipboard. (See your Windows documentation.)

Dragging vector artwork from Adobe Illustrator or from other applications that use the Illustrator Clipboard rasterizes the artwork—the mathematically defined lines and curves of the vector art are converted into the pixels or bits of a bitmap image. To copy the vector artwork as a path in Photoshop, hold down Ctrl (Windows) or Command (Mac OS) as you drag from Adobe Illustrator. To copy type, you must first convert it to outlines.

Using the Clipboard to copy between applications

You can often use the Cut or Copy command to copy selections between Photoshop or ImageReady and other applications. The cut or copied selection remains on the Clipboard until you cut or copy another selection.

In some cases, the contents of the Clipboard are converted to a raster image. Photoshop prompts you when vector artwork will be rasterized.

Note: *The image is rasterized at the resolution of the file into which you paste it.*

To change the Export Clipboard preference (Photoshop):

1 Do one of the following:

- In Windows, choose Edit > Preferences > General.
- In Mac OS, choose Photoshop > Preferences > General.

2 Select Export Clipboard to save any Photoshop contents on the Clipboard when you exit from Photoshop. If you leave this deselected, the contents are deleted when you exit from the program.

To paste PostScript artwork from another application:

1 In the supporting application, select your artwork, and choose Edit > Copy.

For more information, see "About file formats" in Photoshop Help.

2 In Photoshop or ImageReady, select the image into which you'll paste the selection.

3 Choose Edit > Paste.

4 (Photoshop) In the dialog box, select from the following options:

- Paste as Pixels to have the artwork rasterized as it is pasted. Rasterizing converts mathematically defined vector artwork to pixels.
- Paste as Paths to paste the copy as a path in the Paths palette. When copying type from Illustrator, you must first convert it to outlines.
- Paste as Shape Layer to create a new shape layer that uses the path as a vector mask.

Important: *When copying artwork from Adobe Illustrator, Illustrator's default Clipboard preferences may prevent the Paste dialog box from appearing in Photoshop. Select AICB in the Files and Clipboard area of Illustrator's Preferences dialog box if you want the Paste options to appear when you paste the artwork in Photoshop.*

5 If you chose Paste as Pixels in the previous step, you can choose Anti-alias in the options bar to make a smooth transition between the edges of the selection and the surrounding pixels.
(See "Softening the edges of a selection" on page 118.)

Note: *You can use the Matting commands if you have already merged data and are trying to reextract the rasterized data. (See "Removing fringe pixels from a selection (Photoshop)" on page 125.)*

Using the Snap command

Snapping helps with precise placement of selection edges, cropping marquees, slices, shapes, and paths. However, sometimes snapping prevents you from correctly placing elements. You can enable or disable snapping using the Snap command. You can also specify different elements to which you want to snap when snapping is enabled.

To enable or disable snapping:

Choose View > Snap. A check mark indicates that snapping is enabled.

To specify what to snap to:

Choose View > Snap To, and choose one or more options from the submenu:

- Guides to snap to guides.
- Grid to snap to the grid. You cannot select this option when the grid is hidden.

See "Using guides and the grid" on page 34 for more information about guides and the grid.

- Slices to snap to slice boundaries. You cannot select this option when slices are hidden. (See "Viewing slices" on page 248.)
- Document Bounds to snap to the edges of the document.
- All to select all Snap To options.
- None to deselect all Snap To options.

A check mark indicates that the option is selected and snapping is enabled. A dot (Windows) or a dash (Mac OS) indicates that the option is selected but snapping is disabled.

To enable snapping for one Snap To option:

1 With the Snap command disabled, choose View > Snap To.

2 Choose an option. This automatically enables snapping for the selected option, and deselects all other Snap To options.

Saving and loading selections

Selections can be saved and loaded for reuse. (See "Saving a mask selection" on page 134.)

To save a selection:

Choose Select > Save Selection.

To load a saved selection (Photoshop):

1 Choose Select > Load Selection, and then enter the options in the Load Selection dialog window.

2 Click OK to load selection. (See "Loading a selection into an image" on page 135.)

To load a saved selection (ImageReady):

Choose Select > Load Selection, and then choose an option from the submenu.

Deleting selections

To delete a selection, choose Edit > Clear, or press Backspace (Windows) or Delete (Mac OS). To cut a selection to the Clipboard, choose Edit > Cut.

Deleting a selection on a background or on a layer with the Lock Transparency option selected in the Layers palette replaces the original location with the background color. Deleting a selection on a layer without Lock Transparency selected replaces the original area with the layer transparency.

Removing fringe pixels from a selection (Photoshop)

When you move or paste an anti-aliased selection, some of the pixels surrounding the selection border are included with the selection. This can result in a fringe or halo around the edges of the pasted selection. These Matting commands let you edit unwanted edge pixels:

- Defringe replaces the color of any fringe pixels with the colors of nearby pixels containing pure colors (those without background color). For example, if you select a yellow object on a blue background and then move the selection, some of the blue background is selected and moved with the object. Defringe replaces the blue pixels with yellow ones.

- Remove Black Matte and Remove White Matte are useful when you want to paste a selection anti-aliased against a white or black background onto a different background. For example, anti-aliased black text on a white background has gray pixels at the edges, which are visible against a colored background.

You can also remove fringe areas by using the Advanced Blending sliders in the Layer Styles dialog box to remove, or make transparent, areas from the layer. In this case, you would make the black or white areas transparent. Alt-click (Windows) or Option-click (Mac OS) the sliders to separate them; separating the sliders allows you to remove fringe pixels and retain a smooth edge.

To decrease a fringe on a selection:

1 Choose Layer > Matting > Defringe.

2 Enter a value in the Width text box for the distance to search for replacement pixels. In most cases, a distance of 1 or 2 pixels is enough.

3 Click OK.

To remove a matte from a selection:

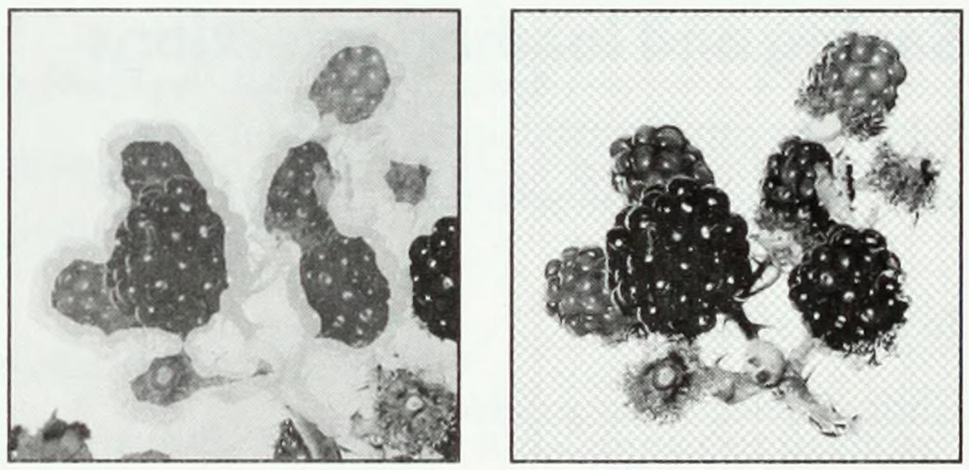
Choose Layer > Matting > Remove Black Matte or Layer > Matting > Remove White Matte.

Using the Extract filter (Photoshop)

The Extract filter dialog box provides a sophisticated way to isolate a foreground object and erase its background on a layer. Even objects with wispy, intricate, or undefinable edges may be clipped from their backgrounds with a minimum of manual work. You use tools in the Extract dialog box to specify which part of the image to extract. You can resize the dialog box by dragging its lower right corner.

For simpler cases, try using the Background Eraser tool (see "Using the Background Eraser tool (Photoshop)" on page 173).

When you extract the object, Photoshop erases its background to transparency. Pixels on the edge of the object lose their color components derived from the background, so they can blend with a new background without producing a color halo.



Selected area highlighted and filled, and extracted object

You can add back opacity to the background and create other effects by using the Edit > Fade command after an extraction. (See "Blending filter effects (Photoshop)" on page 240.)

To extract an object from its background:

1 In the Layers palette, select the layer containing the object you want to extract. If you select a background layer, it becomes a normal layer after the extraction. If the layer contains a selection, the extraction erases the background only in the selected area.

To avoid losing the original image information, duplicate the layer or make a snapshot of the original image state.

2 Choose Filter > Extract, and then specify options for tools on the right side of the dialog box:

- For Brush Size, enter a value, or drag the slider to specify the width of the edge highlighter, eraser, cleanup, and edge touchup tools. This setting affects the size of the Highlighter tool .
- For Highlight, choose a preset color option for the highlight that appears around objects you choose with the Highlighter tool, or choose Other to specify a custom color for the highlight.
- For Fill, choose a preset color option, or choose Other to specify a custom color for the area covered by the Fill tool.
- If you are highlighting a well-defined edge, select Smart Highlighting. This option helps you keep the highlight on the edge, and applies a highlight that is just wide enough to cover the edge, regardless of the current brush size.

If you use Smart Highlighting to mark an object edge that is near another edge, decrease the brush size if conflicting edges pull the highlight off the object edge. If the object edge has a uniform color on one side and high-contrast edges on the other side, keep the object edge within the brush area but center the brush on the uniform color.

3 Specify Extraction options:

- Select Textured Image if the foreground or background of your image contains a lot of texture.
- For Smooth, enter a value or drag the slider to increase or decrease the smoothness of the outline.
- To base the highlight on a selection saved in an alpha channel, choose the alpha channel from the Channel menu. The alpha channel should be based on a selection of the edge boundary. If you modify a highlight based on a channel, the channel name in the menu changes to Custom. (See "About channels" on page 185.)
- Select Force Foreground if the object is especially intricate or lacks a clear interior.

4 Adjust the view as needed:

- To magnify an area, select the Zoom tool in the dialog box, and click in the preview image. To zoom out, hold down Alt (Windows) or Option (Mac OS) as you click.
- To view a different area, select the Hand tool in the dialog box, and drag in the preview image.

5 Define the edge of the object you want to extract:

- To draw a highlight that marks the edge, select the Edge Highlighter tool in the dialog box, and drag so that the highlight slightly overlaps both the foreground object and its background. Use Smart Highlighting to trace sharper edges. Use a large brush to cover wispy, intricate edges where the foreground blends into the background, such as hair or trees.
- If the object has a well-defined interior, make sure that the highlight forms a complete enclosure. You do not need to highlight areas where the object touches the image boundaries. If the object lacks a clear interior, highlight the entire object.
- To erase the highlight, select the Eraser tool in the dialog box, and drag over the highlight. To erase the entire highlight, press Alt+Backspace (Windows) or Option+Delete (Mac OS).

6 Define the foreground area:

- If the object has a well-defined interior, select the Fill tool in the dialog box. Click inside the object to fill its interior. (Clicking a filled area with the Fill tool removes the fill.)

Note: *You can't highlight the entire object if you've selected Texture or Force Foreground.*

- If you've selected Force Foreground, select the Eyedropper tool in the dialog box, and click inside the object to sample the foreground color, or click in the Color text box and use a color picker to select the foreground color. This technique works best with objects that contain tones of a single color.

7 Click Preview to preview the extracted object, or skip to step 10 to extract the object without a preview.

Zoom in as needed, and set any preview options:

- Use Show menu options to switch between previews of the original and extracted images.
- Use Display menu options to preview the extracted object against a colored matte background or as a grayscale mask. To display a transparent background, choose None.
- Select Show Highlight or Show Fill to display the object's highlight or fill.

8 If necessary, repeat the extraction to improve the results (when you are finished, you can perform final touchups as described in step 9):

- To perform another extraction after adjusting the highlight and fill, repeat steps 5, 6, and 7.
- To perform another extraction with new extraction settings, change the Smooth, Force Foreground, or Color settings, and repeat step 7.

Note: *To specify the amount of smoothing of the extracted object, drag the Smooth slider or enter a value. It is usually best to begin with a zero or small value to avoid unwanted blurring of details. If there are sharp artifacts in the extraction result, you can increase the Smooth value to help remove them in the next extraction.*

9 Touch up the extraction results as needed:

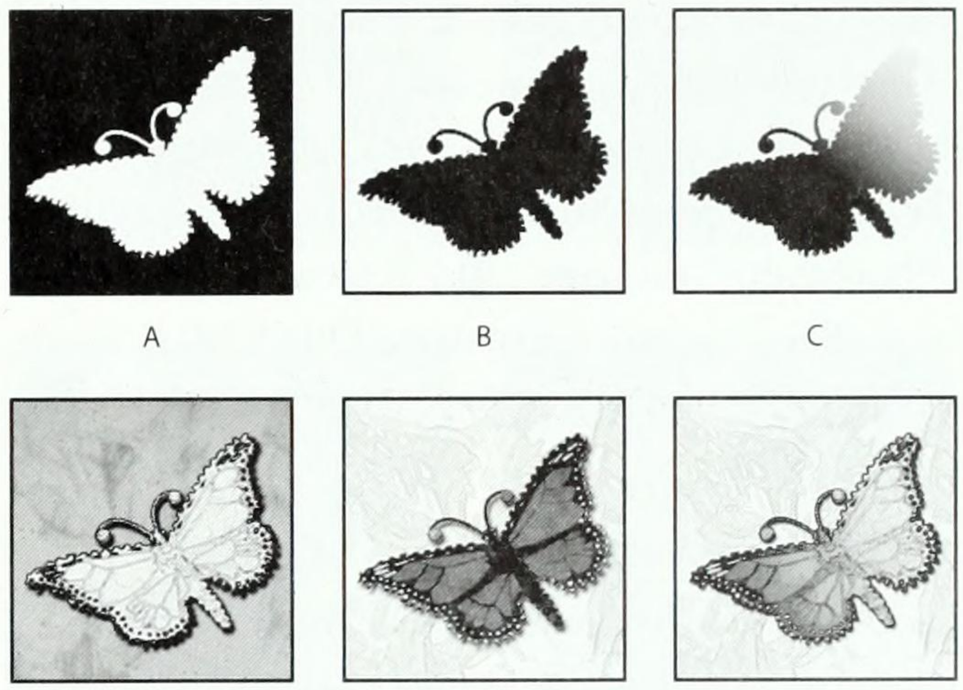
- To erase background traces in the extracted area, use the Cleanup tool. The tool subtracts opacity and has a cumulative effect. You can also use the Cleanup tool to fill gaps in the extracted object. Hold down Alt (Windows) or Option (Mac OS) while dragging to add back opacity.
- To edit the edge of the extracted object, use the Edge Touchup tool. The tool sharpens edges and has a cumulative effect. If there is no clear edge, the Edge Touchup tool adds opacity to the object or subtracts opacity from the background.

10 Click OK to apply the final extraction. On the layer, all pixels outside the extracted object are erased to transparency.

Note: *For best results in cleaning up stray edges, use the cleanup and Edge Touchup tools in the Extract dialog box. You can also clean up after an extraction by using the Background Eraser and History Brush tools in the toolbox.*

About masks (Photoshop)

Masks let you isolate and protect areas of an image as you apply color changes, filters, or other effects to the rest of the image. When you select part of an image, the area that is not selected is "masked" or protected from editing. You can also use masks for complex image editing such as gradually applying color or filter effects to an image.



Examples of masks
A. *Opaque mask used to protect the background and edit the butterfly* ***B.*** *Opaque mask used to protect the butterfly and color the background* ***C.*** *Semitransparent mask used to color the background and part of the butterfly*

Masks and channels are grayscale images, so you can edit them like any other image. With masks and channels, areas painted black are protected, and areas painted white are editable. Masks let you save and reuse time-consuming selections as alpha channels. Alpha channels can store selections so you can use them again, or you can load a saved selection into another image.

Photoshop lets you create masks in the following ways:

Quick Mask mode Lets you edit any selection as a mask. The advantage of editing your selection as a mask is that you can use almost any Photoshop tool or filter to modify the mask. For example, if you create a rectangular selection with the Marquee tool, you can enter Quick Mask mode and use the paintbrush to extend or contract the selection, or you can use a filter to distort the edges of the selection. You can also use selection tools, because the quick mask is not a selection. (See "Using Quick Mask mode to make selections (Photoshop)" on page 130.) You can also save and load selections you make using Quick Mask mode in Alpha channels (see "Saving a mask selection" on page 134).

Alpha channels Lets you save and load selections. (See "Storing masks in alpha channels" on page 132.) You can edit Alpha channels using any of the editing tools. When a channel is selected in the Channels palette, foreground and background colors appear as grayscale values. (See "Using Quick Mask mode to make selections (Photoshop)" on page 130.)

Layer masks and vector masks let you produce a mix of soft and hard masking edges on the same layer. By making changes to the layer mask or the vector masks, you can apply a variety of special effects. (See "Masking layers" on page 229.)

Using Quick Mask mode to make selections (Photoshop)

To use Quick Mask mode, start with a selection and then add to or subtract from it to make the mask. Alternately, create the mask entirely in Quick Mask mode. Color differentiates the protected and unprotected areas. When you leave Quick Mask mode, the unprotected areas become a selection.

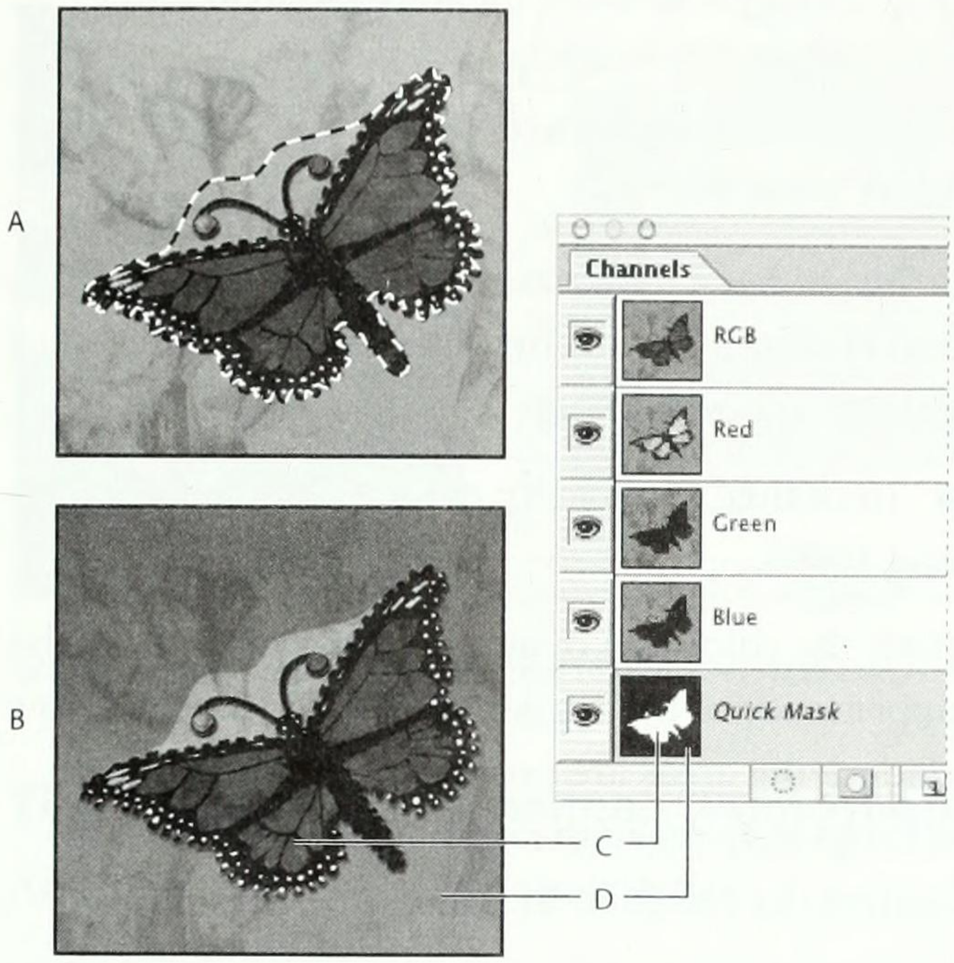
A temporary Quick Mask channel appears in the Channels palette while you work in Quick Mask mode. However, you do all mask editing in the image window.

To create a temporary mask:

1 Using any selection tool, select the part of the image you want to change.

2 Click the Quick Mask mode button in the toolbox.

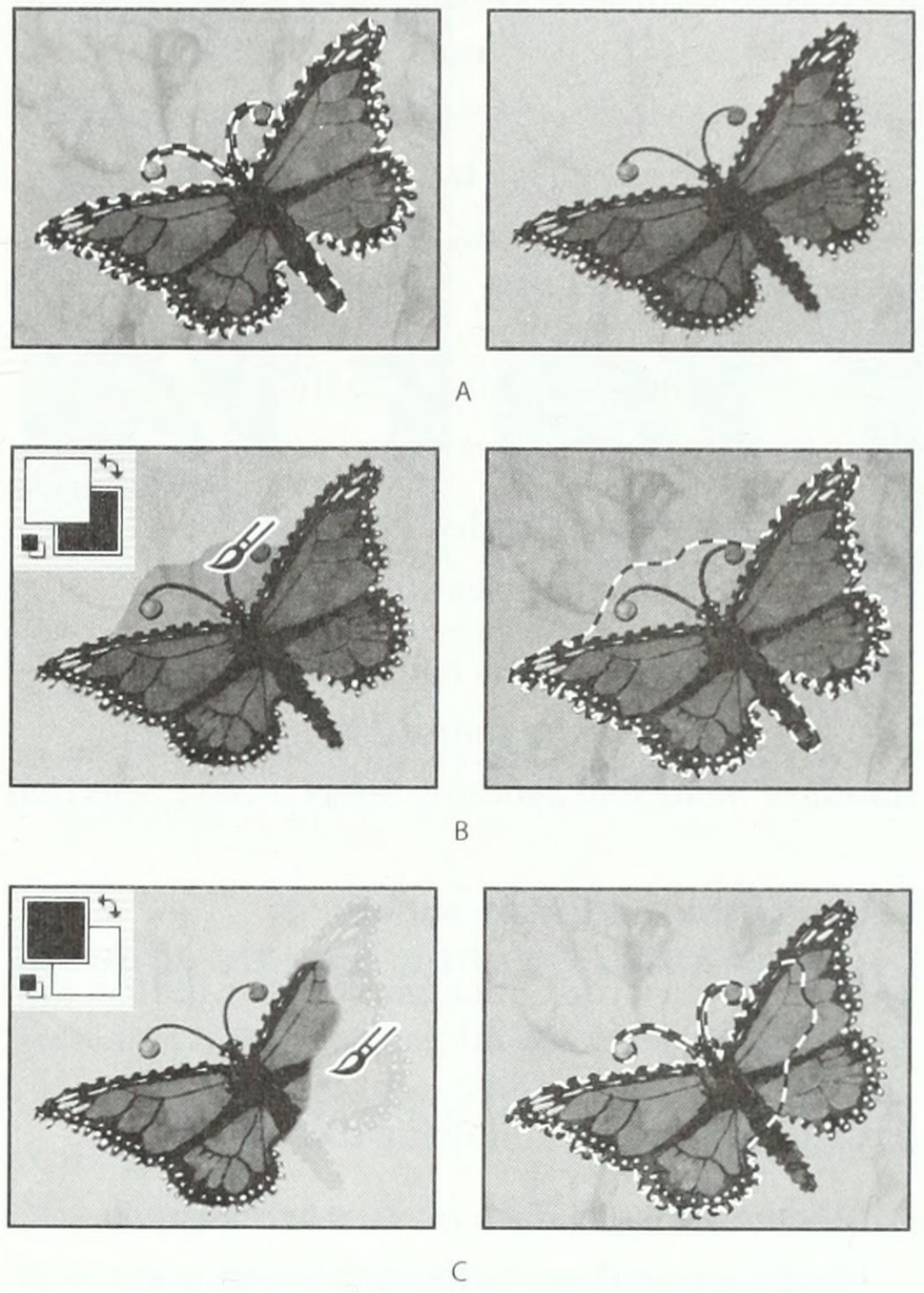
A color overlay (similar to a rubylith) covers and protects the area outside the selection. Selected areas are left unprotected by this mask. By default, Quick Mask mode colors the protected area using a red, 50% opaque overlay.



Selecting in Standard mode and Quick Mask mode
A. *Standard mode* ***B.*** *Quick Mask mode* ***C.*** *Selected pixels appear as white in channel thumbnail* ***D.*** *Rubylith overlay protects area outside selection and unselected pixels appear as black in channel thumbnail*

3 To edit the mask, select a painting tool from the toolbox. The swatches in the toolbox automatically become black and white.

4 Paint with white to select more of an image (the color overlay is removed from areas painted with white). To deselect areas, paint over them with black (the color overlay covers areas painted with black). Painting with gray or another color creates a semitransparent area, useful for feathering or anti-aliased effects (semitransparent areas may not appear selected when you exit Quick Mask Mode, but they are).



Painting in Quick Mask mode
A. *Original selection and Quick Mask mode with green chosen as mask color* ***B.*** *Painting with white in Quick Mask mode adds to the selection* ***C.*** *Painting with black in Quick Mask mode subtracts from the selection*

5 Click the Standard Mode button ◻ in the toolbox to turn off the quick mask and return to your original image. A selection border now surrounds the unprotected area of the quick mask.

If a feathered mask is converted to a selection, the boundary line runs halfway between the black pixels and the white pixels of the mask gradient. The selection boundary indicates the pixels' transition from being less than 50% selected to more than 50% selected.

6 Apply the desired changes to the image. Changes affect only the selected area.

7 Choose Select > Deselect to deselect the selection, or save the selection.

You can convert this temporary mask to a permanent alpha channel by switching to standard mode and choosing Select > Save Selection

To change the Quick Mask options:

1 Double-click the Quick Mask Mode button in the toolbox.

2 Choose from the following display options:

- Masked Areas to have masked areas appear black (opaque) and to have selected areas appear white (transparent). Painting with black increases the masked area; painting with white increases the selected area. With this option, the Quick Mask button in the toolbox appears as a white circle on a gray background.
- Selected Areas to have masked areas appear white (transparent) and to have selected areas appear black (opaque). Painting with white increases the masked area; painting with black increases the selected area. With this option, the Quick Mask button in the toolbox appears as a gray circle on a white background.

To toggle between the Masked Areas and Selected Areas options for quick masks, Alt-click (Windows) or Option-click (Mac OS) the Quick Mask Mode button.

3 To choose a new mask color, click the color box, and choose a new color. (See "Using the Swatches palette" on page 182.)

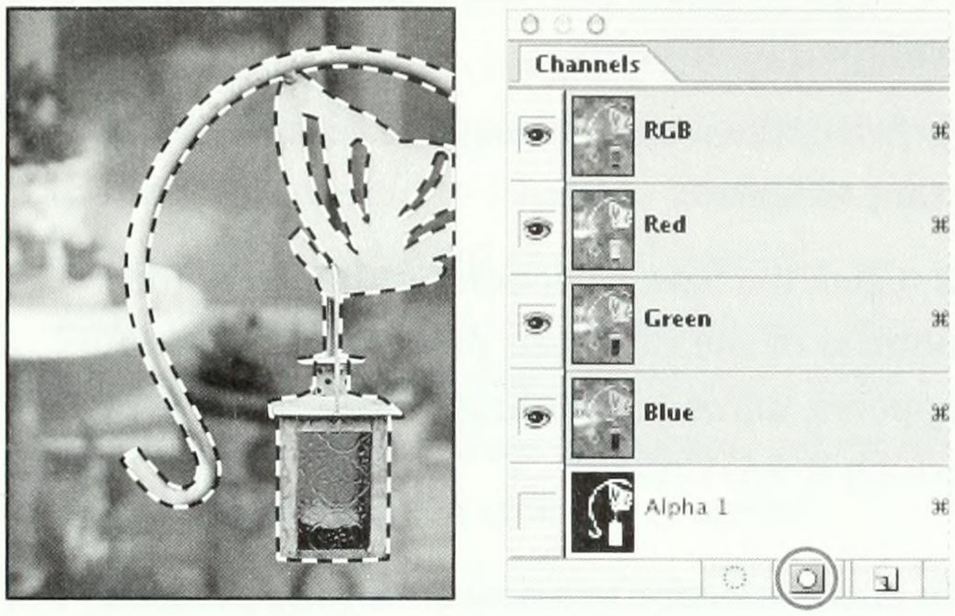
4 To change the opacity, enter a value between 0% and 100%.

Both the color and opacity settings affect only the appearance of the mask and have no effect on how underlying areas are protected. Changing these settings may make the mask more easily visible against the colors in the image.

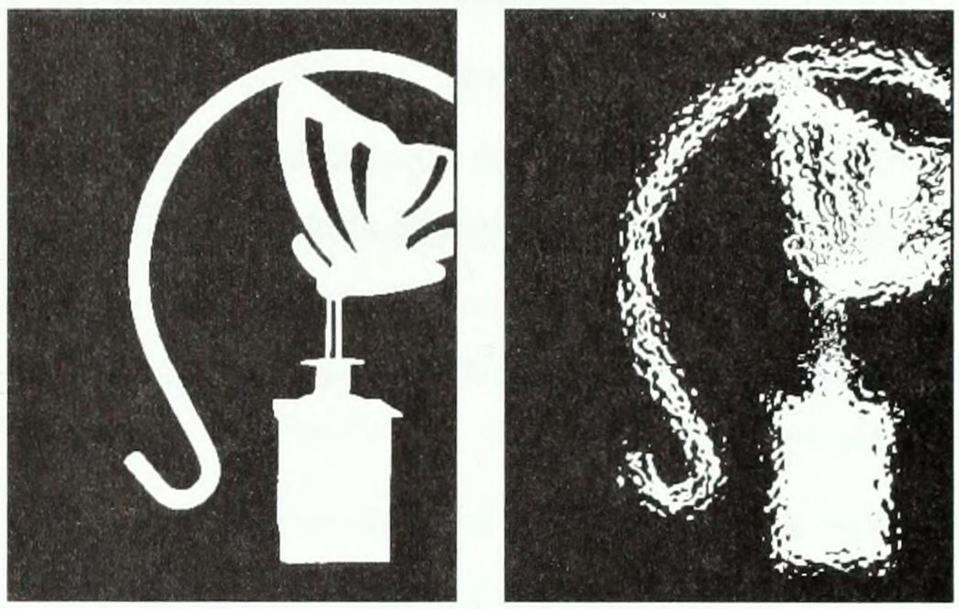
Storing masks in alpha channels

In addition to the temporary masks of Quick Mask mode, you can create more permanent masks by storing them in *alpha channels*. This allows you to use the masks again in the same image or in a different image.

You can create an alpha channel in Photoshop and then add a mask to it. You can also save an existing selection in a Photoshop or ImageReady image as an alpha channel that will appear in the Channels palette in Photoshop.



Selection saved as an alpha channel in Channels palette



Original mask (left), and after a filter was applied (right)

Tips for using alpha channels (Photoshop)

An alpha channel has these properties:

- Each image can contain up to 56 channels, including all color and alpha channels.
- You can specify a name, color, mask option, and opacity for each channel. (The opacity affects the preview of the channel, not the image.)
- All new channels have the same dimensions and number of pixels as the original image.
- You can edit the mask in an alpha channel using painting tools, editing tools, and filters.
- You can convert alpha channels to spot color channels.

Creating alpha channels (Photoshop)

You can create a new alpha channel and then use painting tools, editing tools, and filters to add the mask to it.

To create an alpha channel using current options:

1 Click the New Channel button at the bottom of the Channels palette. The new channel is named according to the sequence in which it was created.

2 Use a painting or editing tool to paint in the image. Paint with black to add to the channel; paint with white to remove from the channel; paint with a lower opacity or a color to add to the channel with lower opacities.

To create an alpha channel and specify options:

1 Do one of the following:

- Alt-click (Windows) or Option-click (Mac OS) the New Channel button at the bottom of the palette.
- Choose New Channel from the Channels palette menu.

2 Type a name for the channel.

3 Select display options for the channel, as described in steps 2 through 4 of the procedure for changing Quick Mask options in "Using Quick Mask mode to make selections (Photoshop)" on page 130. Alpha channel options are identical to Quick Mask options.

4 Click OK. A new channel appears at the bottom of the Channels palette and is the only channel visible in the image window.

5 Click the eye icon next to a color channel or the composite color channel to display the image with a color overlay.

6 Use a painting or editing tool to paint in the image. Paint with black to add to the new channel, paint with white to remove from the new channel, or paint with a lower opacity or a color to add to the new channel with lower opacities.

Saving a mask selection

You can save any selection as a mask in a new or existing alpha channel.

To save a selection to a new channel with default options (Photoshop):

1 Select the area or areas of the image that you want to isolate.

2 Click the Save Selection button at the bottom of the Channels palette. A new channel appears, named according to the sequence in which it was created.

To save a selection to a new or existing channel:

1 Select the area or areas of the image that you want to isolate.

2 Choose Select > Save Selection.

3 Do the following in the Save Selection dialog box, and click OK:

- (Photoshop) Choose a destination image for the selection in the Document menu. By default, the selection is placed in a channel in your active image. You can choose to save the selection to a channel in another open image with the same pixel dimensions or to a new image.
- Choose a destination channel for the selection from the Channel pop-up menu. By default, the selection is saved in a new channel. You can choose to save the selection to any existing channel in the selected image or to a layer mask if the image contains layers.
- If you're saving the selection as a new channel, enter a name for the channel in the Name text box. In ImageReady, you can change the default channel name if desired.

- If you're saving the selection to an existing channel, select how to combine the selections: Replace Channel to replace the current selection in the channel, Add to Channel to add the selection to the current channel contents, Subtract from Channel to delete the selection from the channel contents, or Intersect with Channel to keep the areas of the new selection that intersect with the channel contents.

In Photoshop, you can select the channel in the Channels palette to see the saved selection displayed in grayscale. A selection saved in ImageReady will appear in a new or existing channel in the Photoshop Channels palette.

Modifying alpha channels (Photoshop)

You can edit an alpha channel to add or remove color in it, and you can specify settings for the masking colors and opacity. See "Managing channels (Photoshop)" on page 187 for information on rearranging, duplicating, or deleting alpha channels.

To edit an alpha channel:

Use a painting or editing tool to paint in the image. Paint with black to add to the channel, paint with white to remove from the channel, or paint with a lower opacity or a color to add to the channel with lower opacities.

To change an alpha channel's options:

1 Do one of the following:

- Select the channel in the Channels palette, and choose Channel Options from the palette menu.
- Double-click the channel thumbnail in the Channels palette.

2 Enter a new name for the channel.

3 Choose display options, as described in steps 2 through 4 of the procedure on Quick Mask options in "Using Quick Mask mode to make selections (Photoshop)" on page 130.

For information on changing Spot Color channel options, see Photoshop Help.

Loading a selection into an image

You can reuse a previously saved selection by loading it into an image. In Photoshop, you can also load the selection into an image when you have finished modifying an alpha channel.

You can drag a selection from one open Photoshop image into another.

To load a saved selection (Photoshop):

Do one of the following in the Channels palette:

- Select the alpha channel, click the Load Selection button ◌ at the bottom of the palette, and then click the composite color channel near the top of the palette.
- Drag the channel containing the selection you want to load onto the Load Selection button.

- Ctrl-click (Windows) or Command-click (Mac OS) the channel containing the selection you want to load.
- To add the mask to an existing selection, press Ctrl+Shift (Windows) or Command+Shift (Mac OS), and click the channel.
- To subtract the mask from an existing selection, press Ctrl+Alt (Windows) or Command+Option (Mac OS), and click the channel.
- To load the intersection of the saved selection and an existing selection, press Ctrl+Alt+Shift (Windows) or Command+Option+Shift (Mac OS), and select the channel.

To load a saved selection into an image (Photoshop):

1 Choose Select > Load Selection. For Document, the active filename is selected.

2 For Channel, choose the channel containing the selection you want to load.

3 Click Invert to make the nonselected areas selected and vice versa.

4 If the destination image already has a selection, indicate how to combine the selections. (For information on these options, see "Saving a mask selection" on page 134.)

To load a saved selection into an image (ImageReady):

Choose Select > Load Selection, and then choose an option from the submenu.

To load a selection from another image (Photoshop):

1 Open the two images you want to use.

2 Make the destination image active, and choose Select > Load Selection.

3 For Document, choose the source image.

4 For Channel, choose the channel containing the selection you want to use as a mask.

5 Click Invert if you want to make the nonselected areas selected and vice versa.

6 If the destination image already has a selection, indicate how to combine the selections. (For information on these options, see "Saving a mask selection" on page 134.)

Chapter 6: Transforming and Retouching

Transformations—such as cropping, scaling, rotating, and distorting—let you change the geometry of an entire image or parts of an image. Retouching lets you correct the tone and focus of an image, remove dust and scratches, and clone pixels within or between images.

Changing the size of the work canvas

The Canvas Size command lets you add or remove work space around an existing image. You can also use the command to crop an image by decreasing the canvas area. In ImageReady, added canvas appears in the same color or transparency as the background. In Photoshop, there are several options for the background of the added canvas. If your image has a transparent background, the added canvas will be transparent.

To use the Canvas Size command:

1 Choose Image > Canvas Size.

2 Do one of the following:

- Enter the dimensions you want the canvas to be in the Width and Height boxes. (Photoshop) Choose the units of measurement you want from the drop-down menus next to the Width and Height boxes.
- Select Relative, and enter the amount by which you want to increase or decrease the size of the canvas. (Enter a negative number to decrease the size of the canvas.)

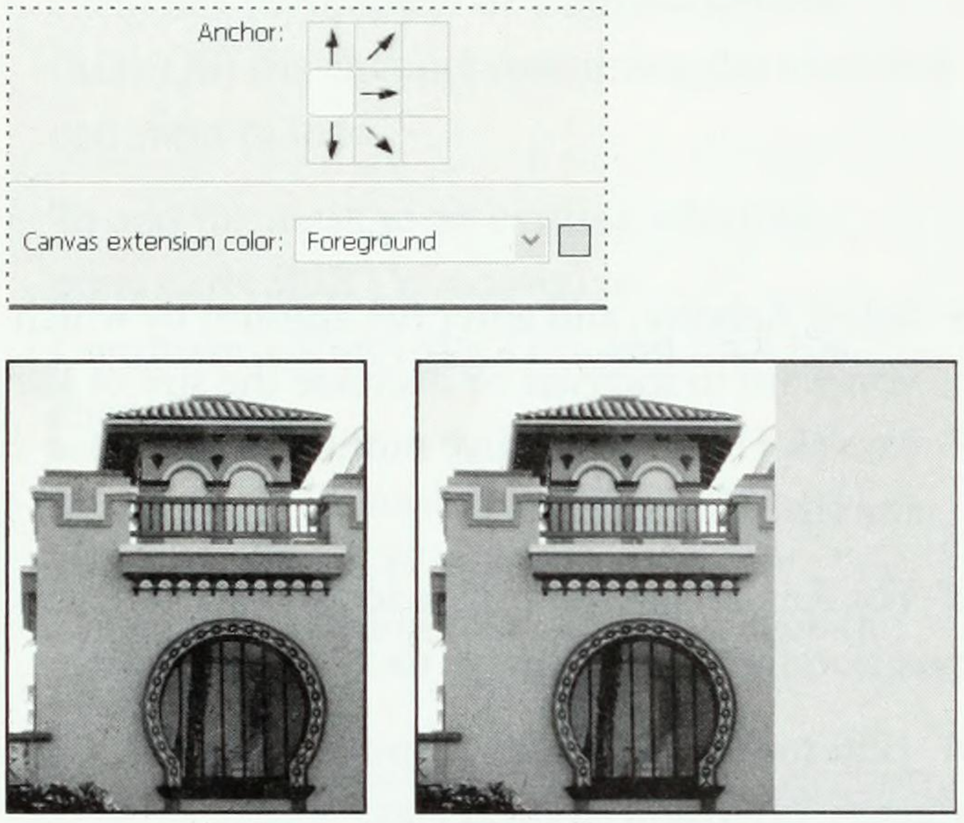
3 For Anchor, click a square to indicate where to position the existing image on the new canvas.

4 (Photoshop) Choose an option from the Canvas Extension Color menu:

- Foreground to fill the new canvas with the current foreground color
- Background to fill the new canvas with the current background color
- White, Black, or Gray to fill the new canvas with that color
- Other to select a new canvas color using the Color Picker

Note: *The Canvas Extension Color menu isn't available if an image doesn't contain a Background layer.*

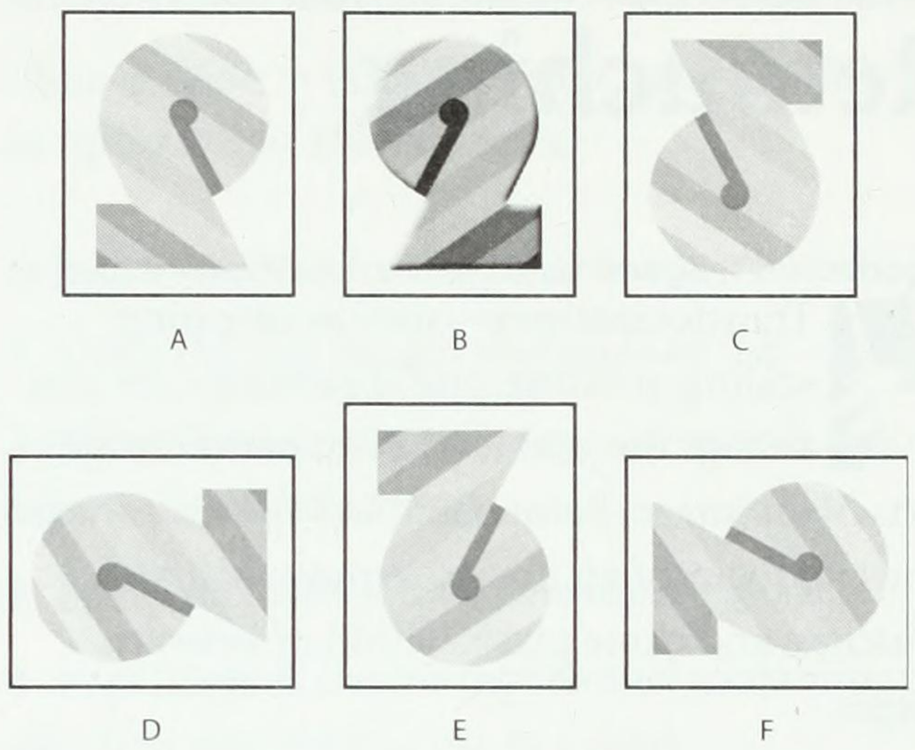
5 Click OK.



Original canvas, and canvas added to right side of image using the foreground color

Rotating and flipping entire images

The Rotate Canvas commands let you rotate or flip an entire image. The commands do not work on individual layers or parts of layers, paths, or selection borders.



Rotating images
A. *Flip Horizontal* ***B.*** *Original image* ***C.*** *Flip Vertical*
D. *Rotate 90° CCW* ***E.*** *Rotate 180°* ***F.*** *Rotate 90° CW*

To rotate or flip an entire image:

Choose Image > Rotate Canvas, and choose one of the following commands from the submenu:

- 180° to rotate the image by a half-turn.
- 90° CW to rotate the image clockwise by a quarter-turn.
- 90° CCW to rotate the image counterclockwise by a quarter-turn.
- Arbitrary to rotate the image by the angle you specify. If you choose this option, enter an angle between –360 and 360 in the angle text box. (In Photoshop, you can select CW or CCW to rotate clockwise or counter-clockwise.) Then click OK.

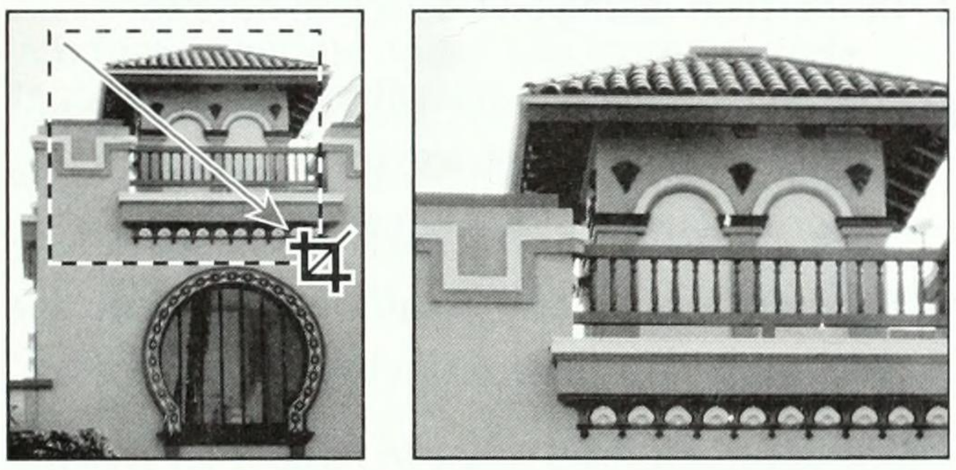
- Flip Canvas Horizontal (Photoshop) or Flip Horizontal (ImageReady) to flip the image horizontally, along the vertical axis.
- Flip Canvas Vertical (Photoshop) or Flip Vertical (ImageReady) to flip the image vertically, along the horizontal axis.

Cropping images

Cropping is the process of removing portions of an image to create focus or strengthen the composition. You can crop an image using the Crop tool and the Crop command. You can also trim pixels using the Trim command

Using the Crop tool

The Crop tool provides the most options for cropping images.



Using the Crop tool

To crop an image using the Crop tool:

1 Select the Crop tool.

2 Drag over the part of the image you want to keep to create a marquee. The marquee doesn't have to be precise—you can adjust it later.

3 If necessary, adjust the cropping marquee:

- To move the marquee to another position, place the pointer inside the bounding box and drag.
- To scale the marquee, drag a handle. To constrain the proportions, hold down Shift as you drag a corner handle.
- To rotate the marquee, position the pointer outside the bounding box (the pointer turns into a curved arrow), and drag. To move the center point around which the marquee rotates, drag the circle at the center of the bounding box.

Note: *In Photoshop, you can't rotate the marquee for an image in Bitmap mode.*

4 Do one of the following:

- To complete the crop, press Enter (Windows) or Return (Mac OS), click the Commit button ✓ in the options bar, or double-click inside the cropping marquee.
- To cancel the cropping operation, press Esc or click the Cancel button ⊘ in the options bar.

To set Crop tool options:

Choose from the following in the options bar to set the mode of the Crop tool:

- (Photoshop) To crop the image without resampling (default), make sure that the resolution text box in the options bar is empty. You can click the Clear button to quickly clear all text boxes.

- (Photoshop) To resample the image during cropping, enter the height and width, and a resolution in the options bar. The Crop tool won't resample the image unless the width and/or height, and resolution are provided.
- (ImageReady) To crop the image without resampling, make sure that Fixed Size is deselected in the options bar.
- (ImageReady) To resample the image during cropping, select Fixed Size, and enter a height and width in the options bar.
- To resample an image based on the dimensions and resolution of another image, open the other image, select the Crop tool, and click Front Image in the options bar. (In ImageReady, you must select the Fixed Size option to access the Front Image button.) Then make the image you want to crop active.

Resampling during cropping combines the function of the Image > Image Size command with that of the Crop tool. (See "About resampling" on page 55.)

- Specify whether you want to hide or delete the cropped area. Select Hide to preserve the cropped area in the image file. You can make the hidden area visible by moving the image with the Move tool. Select Delete to discard the cropped area.

Note: *In Photoshop, the Hide option is not available for images that contain only a background layer. If you want to crop a background by hiding, convert the background to a regular layer first. (See "About the background layer" on page 193.) In ImageReady, cropping a background by hiding automatically converts the background to a regular layer.*

- Specify whether you want to use a cropping shield to shade the area of the image that will be deleted or hidden. When Shield is selected, you can specify a color and opacity for the cropping shield. When Shield is deselected, the area outside the cropping marquee is revealed.

Using the Crop and Trim commands

In addition to the Crop tool, you can use the crop and trim commands to crop an image.

To crop an image using the Crop command:

1 Select the part of the image you want to keep. (See "Using the marquee tools" on page 111.)

2 Choose Image > Crop.

To crop an image using the Trim command:

1 Choose Image > Trim.

2 In the Trim dialog box, select an option:

- Transparent Pixels to trim away transparency at the edges of the image, leaving the smallest image containing non-transparent pixels.
- Top Left Pixel Color to remove an area the color of the upper left pixel from the image.
- Bottom Right Pixel Color to remove an area the color of the lower right pixel from the image.

3 Select one or more areas of the image to trim away: Top, Bottom, Left, or Right.

Transforming perspective while cropping (Photoshop)

The Crop tool in Photoshop has an additional option that allows you to transform the perspective in an image. This is very useful when working with images that contain *keystone distortion*. Keystone distortion occurs when an object is photographed from an angle rather than from a straight-on view. For example, if you take a picture of a a tall building from ground level, the edges of the building appear closer at the top than they do at the bottom.

To learn more about transforming perspective while cropping, see Photoshop Help.

Using the Crop and Straighten Photos command (Photoshop)

The Crop and Straighten Photos command helps you make separate image files from multiple images in a single scan. For best results, you should keep an eighth of an inch between the images in your scan, and the background (typically the scanner bed) should be a uniform color with little "noise". Images with clearly delineated outlines work best with the Crop and Straighten Photos command.

If the Crop and Straighten Photos command isn't processing difficult images, use the Crop tool to crop out individual images (see "Using the Crop tool" on page 139).

To use the Crop and Straighten Photos command:

1 Open the scanned file that contains the images you want to separate.

2 Select the layer that contains the images. Alternately, draw a selection border around one or more images to generate just those images into separate files.

3 Choose File > Automate > Crop and Straighten Photos. The scanned images are processed, and then each image opens in its own window.

If the Crop and Straighten Photos command incorrectly splits one of your images, make a selection border around the image and some background, and then hold down Alt (Windows) or Option (Mac OS) when you choose the command. The modifier key indicates that there is just one image to separate from the background.

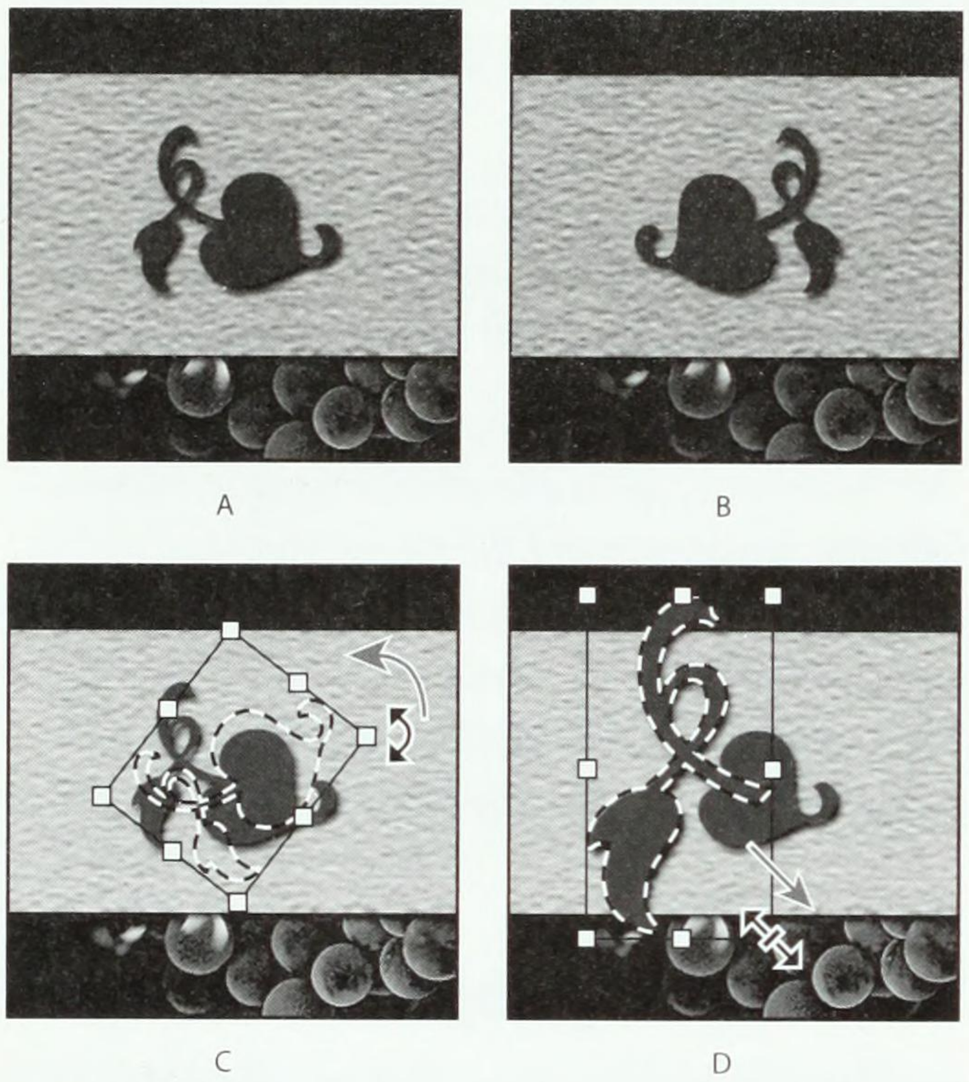
Transforming objects

You can scale, rotate, skew, distort, and apply perspective to entire layers, selected parts of layers, masks, paths, shapes, selection borders, and channels.

Specifying what to transform

You can apply transformations to a selection, an entire layer, multiple layers, or a layer mask. In Photoshop, you can also apply transformations to a path, a vector shape, a vector mask, a selection border, or an alpha channel.

Important: *In Photoshop, you can apply transformations to 8-bit and 16-bit images. However, you'll need to convert images to 8-bit RGB color mode before you can edit them in ImageReady.*



Transforming an image
A. *Original image* ***B.*** *Layer flipped* ***C.*** *Selection border rotated* ***D.*** *Part of object scaled*

To calculate the color values of pixels that are added or deleted during transformations, Photoshop and ImageReady use the interpolation method selected in the General area of the Preferences dialog box. This setting directly affects the speed and quality of the transformation. Bicubic interpolation, the default, is slowest but yields the best results. (See "Choosing an interpolation method" on page 56.)

To specify what to transform:

Do one of the following:

- To transform an entire layer, make the layer active, and make sure nothing is selected.

Important: *You cannot transform the background layer. However, you can convert a background layer to a regular layer. (See "Creating new layers and layer sets" on page 194.)*

- To transform part of a layer, select the layer, and then select part of the image on that layer.
- To transform multiple layers, link the layers together in the Layers palette. (See "Linking layers" on page 200.)
- To transform a layer mask or a vector mask, unlink the mask, and select the mask thumbnail in the Layers palette. (See "Masking layers" on page 229.)
- (Photoshop) To transform a path or vector shape, use the Path Selection tool to select the entire path or the Direct Selection tool to select part of the path. If you select one or more points on a path, only those path segments connected to the points are transformed.

To learn more about selecting paths, see Photoshop Help.

- (Photoshop) To transform a selection border, make or load a selection. Then choose Select > Transform Selection.
- (Photoshop) To transform an alpha channel, select the channel in the Channels palette. (See "Storing masks in alpha channels" on page 132.)

Setting the reference point

All transformations are performed around a fixed point called the *reference point*. By default, this point is at the center of the item you are transforming. However, you can change the reference point or move the center point to a different location using the reference point locator in the options bar.

To set the reference point for a transformation:

1 Select a transformation command, as described in the following topics. A bounding box appears in the image.

2 In the options bar, click a square on the reference point locator in the options bar. Each square represents a point on the bounding box. For example, to set the reference point to the top left corner of the bounding box, click the top left square on the reference point locator.

To move the center point for the transformation:

1 Select a transformation command, as described in the following topics. A bounding box appears in the image.

2 Drag the center point. The center point can be outside the item you want to transform.

Applying transformations

The commands under the Transform submenu let you apply the following transformations to an item:

- Scaling enlarges or reduces an item relative to its reference point. You can scale horizontally, vertically, or both horizontally and vertically.
- Rotating turns an item around a reference point. By default, this point is at the center of the object; however, you can move it to another location.
- Skewing lets you slant an item vertically and horizontally.
- Distorting lets you stretch an item in all directions.
- Applying perspective lets you apply one-point perspective to an item.

In Photoshop, you can perform several commands in succession before applying the cumulative transformation. For example, you can choose Scale, drag a handle to scale, and then choose Distort, drag a handle to distort, and press Enter or Return to apply both transformations. In ImageReady, you can perform multiple types of transformations at the same time using the Transform > Numeric command.

To scale, rotate, skew, distort, or apply perspective:

1 Select what you want to transform.
(See "Specifying what to transform" on page 141.)

2 Choose Edit > Transform > Scale, Rotate, Skew, Distort, or Perspective.

Note: *(Photoshop) If you are transforming a shape or entire path, the Transform menu becomes the Transform Path menu. If you are transforming multiple path segments (but not the entire path), the Transform menu becomes the Transform Points menu.*

3 In the options bar, click a square on the reference point locator . (See "Setting the reference point" on page 143.)

4 Do one or more of the following:

- If you chose Scale, drag a handle on the bounding box. Press Shift as you drag a corner handle to scale proportionately. When positioned over a handle, the pointer becomes a double arrow.
- If you chose Rotate, move the pointer outside of the bounding border (it becomes a curved, two-sided arrow), and then drag. Press Shift to constrain the rotation to 15° increments.
- If you chose Skew, drag a side handle to slant the bounding box.
- If you chose Distort, drag a corner handle to stretch the bounding box.
- If you chose Perspective, drag a corner handle to apply perspective to the bounding box.
- For all types of transformations, enter a value in the options bar. For example, to rotate an item, specify degrees in the rotation ∠ text box.

5 If desired, switch to a different type of transformation by selecting a command from the Edit > Transform submenu.

When transforming a bitmap image (versus a shape or path), it becomes slightly less sharp each time you commit a transformation; therefore, performing multiple commands before applying the cumulative transformation is preferable to applying each transformation separately.

6 When you're satisfied with the results, do one of the following:

- Press Enter (Windows) or Return (Mac OS), click the Commit button ✓ in the options bar, or double-click inside the transformation marquee.
- To cancel the transformation, press Esc or click the Cancel button ⊘ in the options bar.

To flip or rotate precisely:

1 Select what you want to transform.
(See "Specifying what to transform" on page 141.)

2 Choose Edit > Transform and choose one of the following commands from the submenu:

- Rotate 180° to rotate by a half-turn
- Rotate 90° CW to rotate clockwise by a quarter-turn
- Rotate 90° CCW to rotate counterclockwise by a quarter-turn
- Flip Horizontal to flip horizontally, along the vertical axis
- Flip Vertical to flip vertically, along the horizontal axis

Note: *(Photoshop) If you are transforming a shape or entire path, the Transform command becomes the Transform Path command. If you are transforming multiple path segments (but not the entire path), the Transform command becomes the Transform Points command.*

To repeat a transformation:

Choose Edit > Transform > Again, Edit > Transform Path > Again, or Edit > Transform Points > Again.

To duplicate an item when transforming it:

Hold down Alt (Windows) or Option (Mac OS) when selecting the Transform command.

To apply multiple types of transformations at the same time (ImageReady):

1 Select what you want to transform.
(See "Specifying what to transform" on page 141.)

2 Choose Edit > Transform > Numeric.

3 Do one or more of the following, and click OK:

- Select Position and enter values for the new location in the X (horizontal position) and Y (vertical position) text boxes. Select Relative to specify the new position in relation to the current position.
- Select Scale. Enter the dimensions in the Width and Height text boxes, or enter a scaling percentage in the Scale text box. Select Constrain Proportions to maintain the aspect ratio.
- Select Skew and enter degrees in the Horizontal skew and Vertical skew text boxes.
- Select Rotate. Enter degrees of rotation in the Angle text box, or drag the in the circle to the right of the text box.

Using the Free Transform command

The Free Transform command lets you apply transformations (rotate, scale, skew, distort, and perspective) in one continuous operation. Instead of choosing different commands, you simply hold down a key on your keyboard to switch between transformation types.

Note: *(Photoshop) If you are transforming a shape or entire path, the Transform command becomes the Transform Path command. If you are transforming multiple path segments (but not the entire path), the Transform command becomes the Transform Points command.*

To freely transform:

1 Select what you want to transform.
(See "Specifying what to transform" on page 141.)

2 Do one of the following:

- Choose Edit > Free Transform.
- If you are transforming a selection, pixel-based layer, or selection border, choose the Move tool . Then select Show Bounding Box (Photoshop) or Show Transform Box (ImageReady) in the options bar.
- If you are transforming a vector shape or path, select the Path Selection tool . Then select Show Bounding Box in the options bar.

3 Do one or more of the following:

- To scale by dragging, drag a handle. Press Shift as you drag a corner handle to scale proportionately.

- To scale numerically, enter percentages in the Width and Height text boxes in the options bar. Click the Link button to maintain the aspect ratio.
- To rotate by dragging, move the pointer outside of the bounding border (it becomes a curved, two-sided arrow), and then drag. Press Shift to constrain the rotation to 15° increments.
- To rotate numerically, enter degrees in the rotation text box in the options bar.
- To distort relative to the center point of the bounding border, press Alt (Windows) or Option (Mac OS), and drag a handle.
- To distort freely, press Ctrl (Windows) or Command (Mac OS), and drag a handle.
- To skew, press Ctrl+Shift (Windows) or Command+Shift (Mac OS), and drag a side handle. When positioned over a side handle, the pointer becomes a white arrowhead with a small double arrow.
- To skew numerically, enter degrees in the H (horizontal skew) and V (vertical skew) text boxes in the options bar.
- To apply perspective, press Ctrl+Alt+Shift (Windows) or Command+Option+Shift (Mac OS), and drag a corner handle. When positioned over a corner handle, the pointer becomes a gray arrowhead.
- To change the reference point, click a square on the Reference point locator in the options bar. (See "Setting the reference point" on page 143.)
- To move an item, enter values for the new location of the reference in the X (horizontal position) and Y (vertical position) text boxes in the options bar. In Photoshop, click the Relative Positioning button to specify the new position in relation to the current position.

To undo the last handle adjustment, choose Edit > Undo.

4 Do one of the following:

- Press Enter (Windows) or Return (Mac OS), click the Commit button in the options bar, or double-click inside the transformation marquee.
- To cancel the transformation, press Esc or click the Cancel button in the options bar.

When transforming a bitmap image (versus a shape or path), it becomes slightly less sharp each time you commit a transformation; therefore, performing multiple commands before applying the cumulative transformation is preferable to applying each transformation separately.

Retouching and repairing images

You can use the Clone Stamp tool, Pattern Stamp tool, Healing Brush tool, and Patch tool to clone pixels and repair images.

Using the Clone Stamp tool

The Clone Stamp tool takes a sample of an image, which you can then apply over another image or part of the same image. You can also clone part of one layer over another layer. Each stroke of the tool paints on more of the sample.

When you use the Clone Stamp tool, you set a sampling point on the area you want to apply over another area. By selecting Aligned in the options bar, you can reuse the most current sampling point, no matter how many times you stop and resume painting. When Aligned is deselected, you'll reuse the same sampled pixels each time you paint.

Because you can use any brush tip with the Clone Stamp tool, you have a lot of control over the size of the area you clone. You can also use opacity and flow settings in the options bar to finesse the way you apply the cloned area. You can also sample from one image and apply the clone in another image, as long as both images are in the same color mode.

Altering an image with the Clone Stamp tool

To use the Clone Stamp tool:

1 Select the Clone Stamp tool .

2 Choose a brush tip and set brush options for the blending mode, opacity, and flow in the options bar (see "Setting options for painting and editing tools" on page 171).

3 Next, determine how you want to align the sampled pixels. Select Aligned in the options bar to sample pixels continuously, without losing the current sampling point, even if you release the mouse button. Deselect Aligned to continue to use the sampled pixels from the initial sampling point each time you stop and resume painting.

4 Select Use All Layers in the options bar to sample data from all visible layers; deselect Use All Layers to sample only from the active layer.

5 Set the sampling point by positioning the pointer in any open image and Alt-clicking (Windows) or Option-clicking (Mac OS).

6 Drag over the area of the image you want to correct.

Using the Pattern Stamp tool

The Pattern Stamp tool lets you paint with a pattern. You can select a pattern from the pattern libraries or create your own patterns.

To use the Pattern Stamp tool:

1 Select the Pattern Stamp tool .

2 Choose a brush tip and set brush options (blending mode, opacity, and flow) in the options bar (see "Setting options for painting and editing tools" on page 171).

3 Select Aligned in the options bar to sample pixels continuously, without losing the current sampling point, even if you release the mouse button. Deselect Aligned to continue to use the sampled pixels from the initial sampling point each time you stop and resume painting.

4 Select a pattern from the Pattern pop-up palette in the options bar. (See "Creating and managing patterns" on page 178.)

5 If you'd like to apply the pattern with an impressionistic effect, select Impressionist.

6 Drag in the image to paint with the pattern.

Using the Healing Brush tool (Photoshop)

The Healing Brush tool lets you correct imperfections, causing them to disappear into the surrounding image. Like the cloning tools, you use the Healing Brush tool to paint with sampled pixels from an image or pattern. However, the Healing Brush tool also matches the texture, lighting, transparency, and shading of the sampled pixels to the source pixels. As a result, the repaired pixels blend seamlessly into the rest of the image.

Sampled pixels and healed image

To use the Healing Brush tool:

1 Select the Healing Brush tool .

2 Click the brush sample in the options bar and set brush options in the pop-up palette:

- For more information on the Diameter, Hardness, Spacing, Angle, and Roundness options, see "Customizing brush tips (Photoshop)" on page 169.
- If you're using a pressure-sensitive digitizing tablet, choose an option from the Size menu to vary the size of the healing brush over the course of a stroke. Choose Pen Pressure to base the variation on the pen pressure. Choose Stylus Wheel to base the variation on the position of the pen thumbwheel. Choose Off to not vary the size.

3 Choose a blending mode from the Mode pop-up menu in the options bar:

- Choose Replace to preserve noise, film grain, and texture at the edges of the brush stroke.
- For more information on the Normal, Multiply, Screen, Darken, Lighten, Color, and Luminosity modes, see "Selecting a blending mode" on page 171.

4 Choose a source to use for repairing pixels in the options bar: Sampled to use pixels from the current image, or Pattern to use pixels from a pattern. If you chose Pattern, select a pattern from the Pattern pop-up palette. (See "Creating and managing patterns" on page 178.)

5 Select Aligned in the options bar to sample pixels continuously, without losing the current sampling point, even if you release the mouse button. Deselect Aligned to continue to use the sampled pixels from the initial sampling point each time you stop and resume painting.

6 Select Use All Layers in the options bar to sample data from all visible layers. Deselect Use All Layers to sample only from the active layer.

7 For the Healing Brush tool in sampling mode, set the sampling point by positioning the pointer in any open image and Alt-clicking (Windows) or Option-clicking (Mac OS).

Note: *If you are sampling from one image and applying to another, both images must be in the same color mode unless one of the images is in Grayscale mode.*

8 Drag in the image.

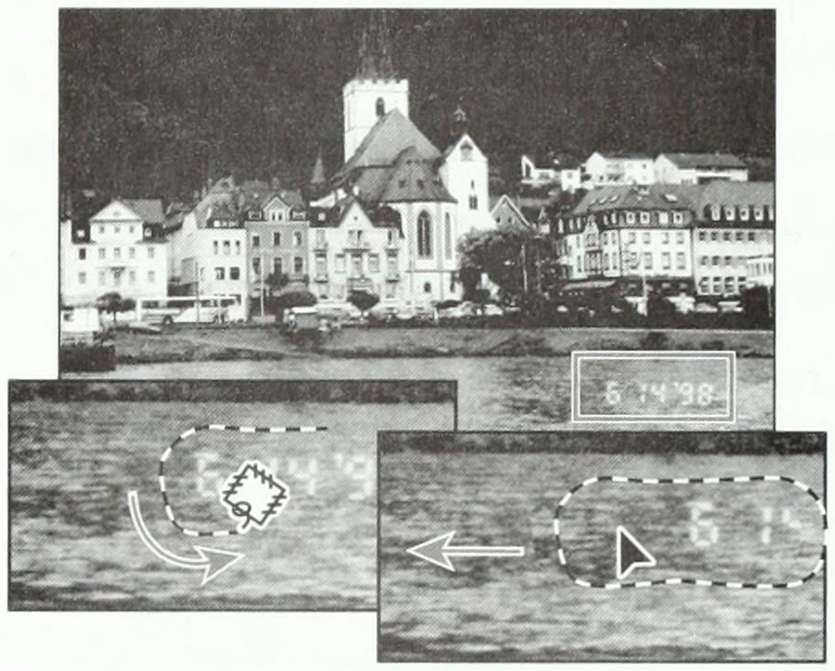
The sampled pixels are melded with the existing pixels each time you release the mouse button. Look in the status bar to view the status of the melding process.

If there is a strong contrast at the edges of the area you want to heal, make a selection before you use the Healing Brush tool. The selection should be bigger than the area you want to heal but should precisely follow the boundary of contrasting pixels. When you paint with the Healing Brush tool, the selection will prevent colors from bleeding in from the outside.

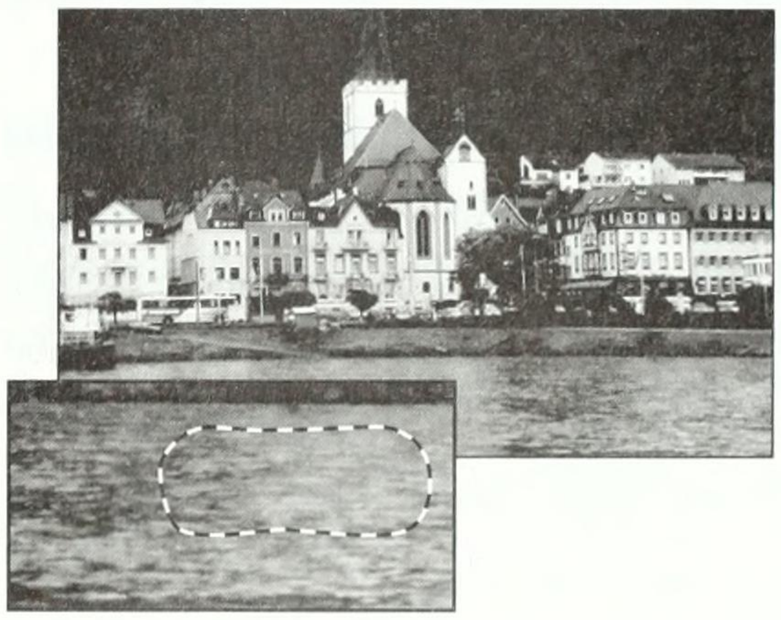
Using the Patch tool (Photoshop)

The Patch tool lets you repair a selected area with pixels from another area or a pattern. Like the Healing Brush tool, the Patch tool matches the texture, lighting, and shading of the sampled pixels to the source pixels. You can also use the Patch tool to clone isolated areas of an image.

When repairing with pixels from the image, select a small area to produce the best result.



Using the Patch tool to replace pixels



Patched image

To repair an area using sampled pixels:

1 Select the Patch tool.

2 Do one of the following:

- Drag in the image to select the area you want to repair, and select Source in the options bar.
- Drag in the image to select the area from which you want to sample, and select Destination in the options bar.

Note: *You can also make a selection prior to selecting the Patch tool.*

3 To adjust the selection, do one of the following:

- Shift-drag in the image to add to the existing selection.
- Alt-drag (Windows) or Option-drag (Mac OS) in the image to subtract from the existing selection.
- Alt-Shift-drag (Windows) or Option-Shift-drag (Mac OS) in the image to select an area intersected by the existing selection.

4 Position the pointer inside the selection, and do one of the following:

- If Source is selected in the options bar, drag the selection border to the area from which you want to sample. When you release the mouse button, the originally selected area is patched with the sampled pixels.
- If Destination is selected in the options bar, drag the selection border to the area you want to patch. When you release the mouse button, the newly selected area is patched with the sampled pixels.

To repair an area using a pattern:

1 Select the Patch tool.

2 Drag in the image to select the area you want to repair.

Note: *You can also make a selection prior to selecting the Patch tool.*

3 To adjust the selection, do one of the following:

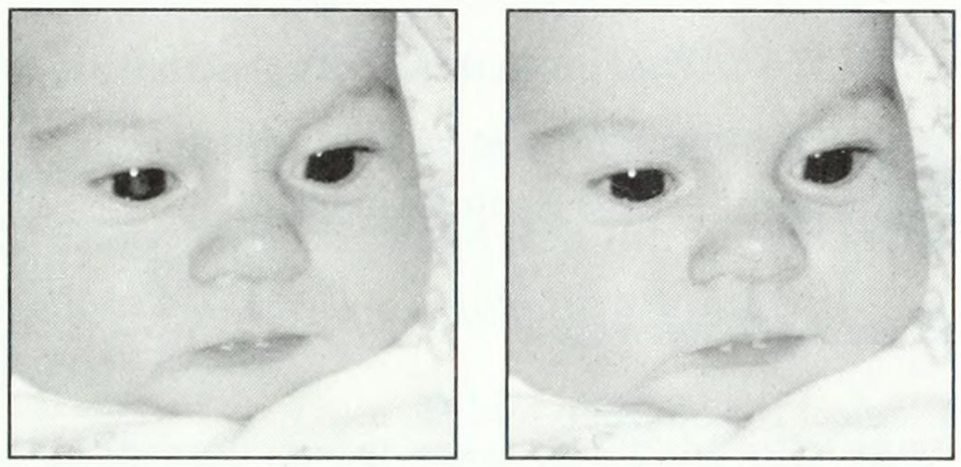
- Shift-drag in the image to add to the existing selection.
- Alt-drag (Windows) or Option-drag (Mac OS) in the image to subtract from the existing selection.
- Alt-Shift-drag (Windows) or Option-Shift-drag (Mac OS) in the image to select an area intersected by the existing selection.

4 Select a pattern from the Pattern pop-up palette in the options bar, and click Use Pattern.

Using the Color Replacement tool

The Color Replacement tool simplifies replacing specific colors in your image. You can paint over a targeted color—for example, a person's red eyes in an image—with a corrective color.

Note: *The Color Replacement tool doesn't work in images in Bitmap, Indexed, or Multichannel color modes.*



Red eyes repaired using the Color Replacement tool

To use the Color Replacement tool:

1 Select the Color Replacement tool.

2 Choose a brush tip in the options bar. Generally, you'll want to keep the blending mode set to Color (see "Setting options for painting and editing tools" on page 171).

3 For the Sampling option, choose one of the following:

- Continuous to sample colors continuously as you drag
- Once to replace the targeted color only in areas containing the color that you first click
- Background Swatch to erase only areas containing the current background color

4 For the Limits option, select one of the following:

- Discontiguous to replace the sampled color wherever it occurs under the pointer
- Contiguous to replace colors that are contiguous with the color immediately under the pointer
- Find Edges to replace connected areas containing the sampled color while better preserving the sharpness of shape edges

5 For tolerance, enter a percentage value (ranging from 0 to 255) or drag the slider. Choose a low percentage to replace colors very similar to the pixel you click, or raise the percentage to replace a broader range of colors.

6 To define a smooth edge to the areas you correct, select Anti-aliased.

7 Choose a foreground color to use to replace the unwanted color.

8 Click the color you want to replace in the image.

9 Drag in the image to replace the targeted color.

Using the Smudge tool (Photoshop)

The Smudge tool simulates the actions of dragging a finger through wet paint. The tool picks up color where the stroke begins and pushes it in the direction you drag.

To use the Smudge tool:

1 Select the Smudge tool.

2 Choose a brush tip and options for the blending mode in the options bar (see "Setting options for painting and editing tools" on page 171).

3 Select Use All Layers in the options bar to smudge using color data from all visible layers. If this is deselected, the Smudge tool uses colors from only the active layer.

4 Select Finger Painting in the options bar to smudge using the foreground color at the beginning of each stroke. If this is deselected, the Smudge tool uses the color under the pointer at the beginning of each stroke.

5 Drag in the image to smudge the pixels.

In Photoshop, press Alt (Windows) or Option (Mac OS) as you drag with the Smudge tool to use the Finger Painting option.

Using the Blur tool (Photoshop)

The Blur tool softens hard edges or areas in an image to reduce detail.

For information on ways to blur images, see Photoshop Help.

To use the Blur tool:

1 Select the Blur tool.

2 Do the following in the options bar:

3 Choose a brush tip and set options for the blending mode and strength in the options bar (see "Setting options for painting and editing tools" on page 171).

4 Select Use All Layers in the options bar to blur using data from all visible layers. If this is deselected, the tool uses data from only the active layer.

5 Drag over the part of the image you want to blur.

Using the Sharpen tool (Photoshop)

The Sharpen tool focuses soft edges to increase clarity or focus.

For information on ways to adjust sharpness, see Photoshop Help.

To use the Sharpen tool:

1 Select the Sharpen tool.

2 Do the following in the options bar:

3 Choose a brush tip and set options for the blending mode and strength in the options bar (see "Setting options for painting and editing tools" on page 171).

4 Select Use All Layers in the options bar to sharpen using data from all visible layers. If this is deselected, the tool uses data from only the active layer.

5 Drag over the part of the image you want to sharpen.

Using the Dodge tool and the Burn tool (Photoshop)

Used to lighten or darken areas of the image, the Dodge tool and the Burn tools are based on a traditional photographer's technique for regulating exposure on specific areas of a print. Photographers hold back light to lighten an area on the print (dodging) or increase the exposure to darken areas on a print (burning).

To use the Dodge tool or the Burn tool:

1 Select the Dodge tool or the Burn tool .

2 Choose a brush tip and set brush options in the options bar (see "Working with brushes" on page 167).

3 In the options bar, select one of the following:

- Midtones to change the middle range of grays
- Shadows to change the dark areas
- Highlights to change the light areas

4 Specify the exposure for the Dodge tool or the Burn tool.

For more information on setting exposure, see Photoshop Help.

5 (Photoshop) Click the airbrush button to use the brush as an airbrush. Alternately, select the Airbrush option in the Brushes palette.

For more information on the airbrush option, see Photoshop Help.

6 Drag over the part of the image you want to lighten or darken.

Using the Sponge tool (Photoshop)

The Sponge tool subtly changes the color saturation of an area. In Grayscale mode, the tool increases or decreases contrast by moving gray levels away from or toward the middle gray.

To use the Sponge tool:

1 Select the Sponge tool .

2 Choose a brush tip and set brush options in the options bar (see "Working with brushes" on page 167).

3 In the options bar, select the way you want to change the color.

- Saturate to intensify the color's saturation
- Desaturate to dilute the color's saturation

4 Specify the flow for the Sponge tool.

For more information on specifying flow, see Photoshop Help.

5 Drag over the part of the image you want to modify.

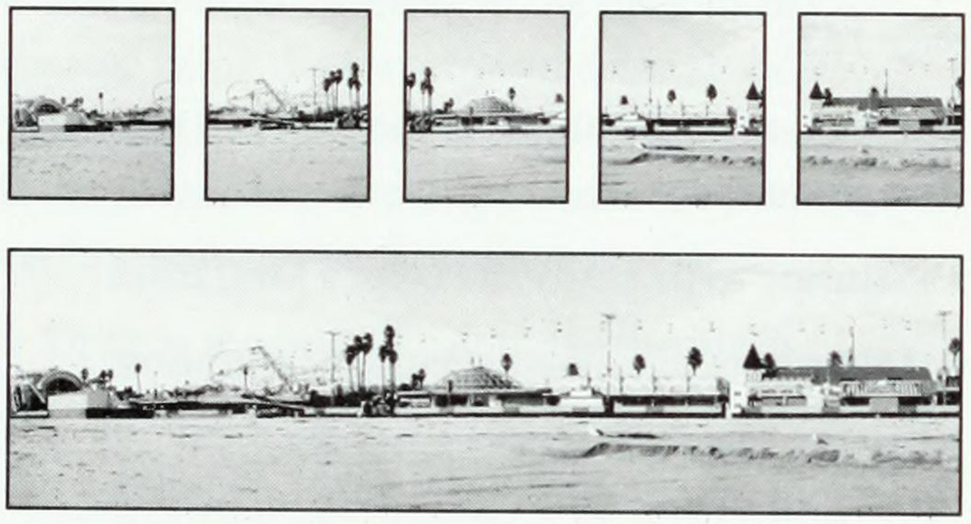
Using the Liquify filter

The Liquify filter lets you push, pull, rotate, reflect, pucker, and bloat any area of an image. The distortions you create can be subtle or drastic, which makes the Liquify command a powerful tool for retouching images as well as creating artistic effects.

To learn more about using the Liquify filter, see Photoshop Help.

Creating panoramic images using Photomerge (Photoshop)

The Photomerge™ command combines several photographs into one continuous image. For example, you can take five overlapping photographs of a city skyline, and then assemble them into a panorama. The Photomerge command is capable of assembling photos that are tiled horizontally as well as vertically.



Source images (top), and completed Photomerge composition (bottom)

To learn more about creating Photomerge compositions, see Photoshop Help.

Chapter 7: Drawing

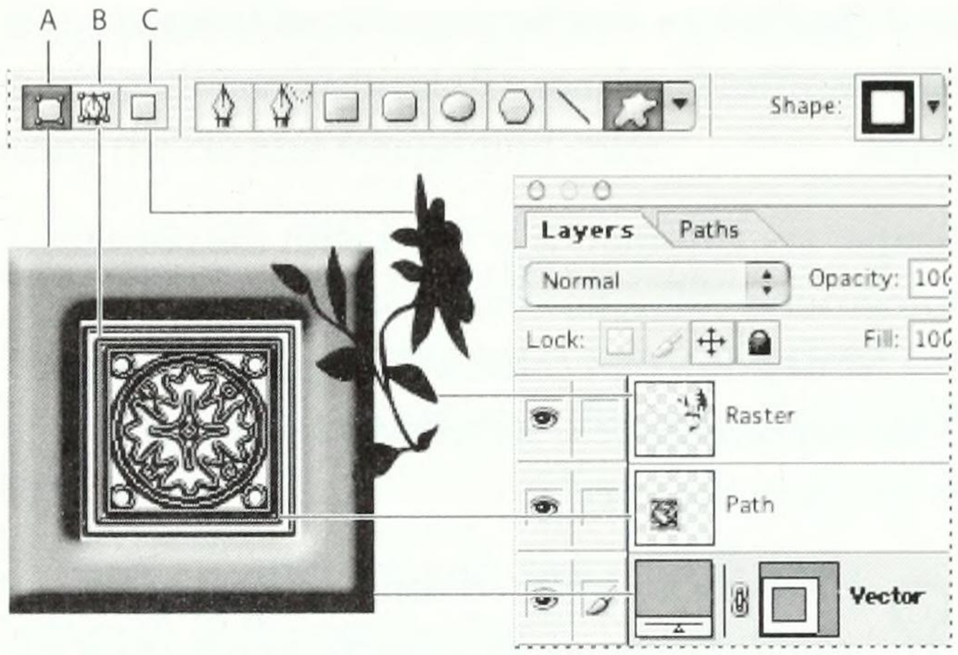
The drawing tools let you create and edit vector shapes. You can work with shapes in shape layers and as paths; you can also create rasterized shapes, which can be edited with the painting tools. The drawing tools provide an easy way to create buttons, navigation bars, and other items used on Web pages.

About shapes and paths

When you draw in Photoshop, you create vector shapes—mathematically defined lines and curves. You use the drawing tools to create shape layers and work paths. Shapes are resolution-independent—they maintain crisp edges when resized, printed to a PostScript printer, saved in a PDF file, or imported into a vector-based graphics application. You can use shapes to make selections and create libraries of custom shapes with the Preset Manager.

In Photoshop, paths are used for making selections and defining areas of an image. The outline of a shape is a path. Paths are made up of one or more straight or curved segments. Each segment is marked by anchor points, which work like pins holding wire in place. You can easily change the shape of a path by editing its anchor points. The Paths palette helps you manage paths. You can't use paths in ImageReady.

For more information on creating and editing paths, see Photoshop Help.



Drawing options
***A.** Shape layers **B.** Paths **C.** Fill pixels*

Using the shape tools

In Photoshop, you can quickly select, resize, and move a shape, and you can edit a shape's attributes (such as stroke, fill color, and style).

ImageReady shapes are object-oriented, meaning that you can resize and move the shapes (see "Using the Free Transform command" on page 145) but not the outline of the shape. In ImageReady, you can easily align shapes as you draw them using smart guides (see "Using guides and the grid" on page 34).

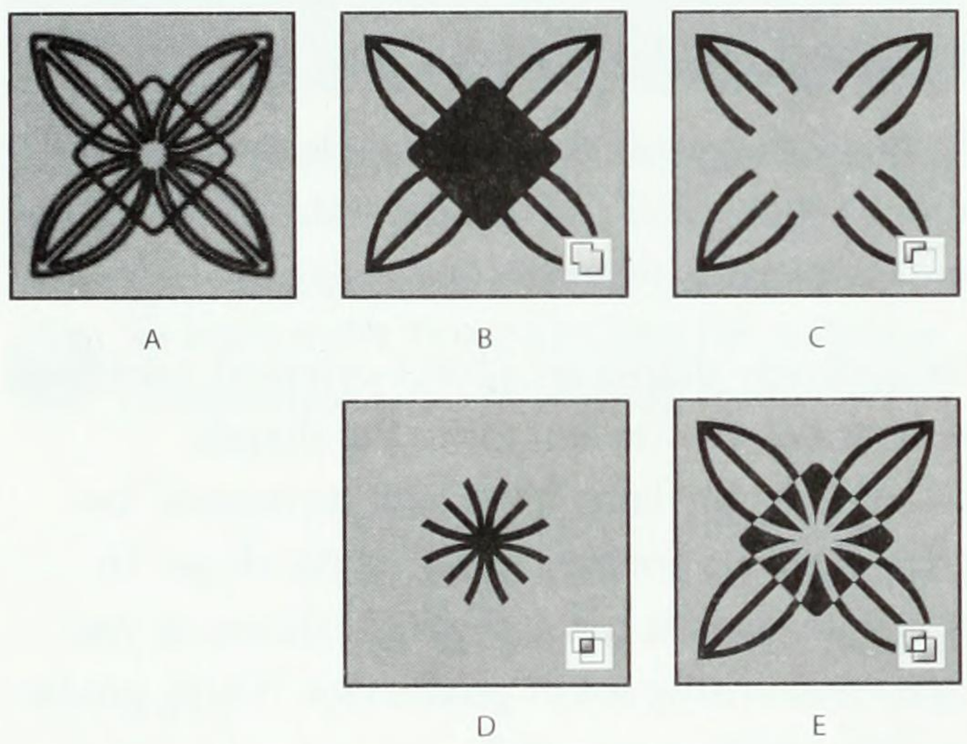
***Note:** The Polygon tool, Custom Shape tool, Add Anchor Point tool, Delete Anchor Point tool, and Convert Point tool are available only in Photoshop.*

Creating shapes

Shapes are drawn on *shape layers*. In Photoshop, you can draw more than one shape in a shape layer, and specify how overlapping shapes interact. In ImageReady, you can draw only one shape in a layer.

Shapes are automatically filled with the current foreground color; however, you can easily change the fill to a different color, a gradient, or a pattern. The shape's outline is stored in a vector mask that is linked to the layer.

Hold down Shift to constrain a rectangle or rounded rectangle to a square, to constrain an ellipse to a circle, or to constrain the line angle to a multiple of 45°.



Drawing multiple shapes in a layer
***A.** Original shape plus additional shape **B.** Result with Add to Shape Area selected **C.** Result with Subtract from Shape Area selected **D.** Result with Intersect Shape Areas selected **E.** Result with Exclude Overlapping Shape Areas selected*

To create a new shape:

1 Select a shape tool or a Pen tool. Make sure that the Shape Layers button is selected in the options bar.

2 To choose the color of the shape, click the color swatch in the options bar, and then choose a color from the Color Picker.

3 If you want to apply a style to the shape, select a preset style from the Style pop-up menu. (See "Applying preset styles" on page 213.)

4 Set additional tool-specific options (see "Using the shape tools" on page 155).

5 Drag in your image to draw a shape. You can then resize or edit the shape (see "Editing shapes (Photoshop)" on page 159).

Hold down the spacebar while you're dragging the mouse to move the shape without changing its size or proportions.

To draw multiple shapes in a layer (Photoshop):

1 Select the layer to which you want to add shapes.

2 Select a drawing tool and set tool-specific options (see "Setting shape tool options" on page 158).

3 Choose one of the following in the options bar:

- Add to Shape Area to add the new area to the existing shapes or path.
- Subtract from Shape Area to remove the overlapping area from the existing shapes or path.

- Intersect Shape Areas to restrict the area to the intersection of the new area and the existing shapes or path.
- Exclude Overlapping Shape Areas to exclude the overlap area in the consolidated new and existing areas.

4 Draw in the image. You can easily switch between drawing tools by clicking a tool button in the options bar.

Using custom shapes (Photoshop)

When you're using the Custom Shape tool, you can choose from a variety of preset shapes. You can also save shapes that you create as preset shapes.

To select a custom shape:

1 Select the Custom Shape tool .

2 Select a shape from the Shape pop-up palette. (See "Using pop-up palettes" on page 16.)

To save a shape or path as a custom shape:

1 In the Paths palette, select a path—either a vector mask for a shape layer, a work path, or a saved path.

2 Choose Edit > Define Custom Shape, and enter a name for the new custom shape in the Shape Name dialog box. The new shape appears in the Shape pop-up palette.

3 To save the new custom shape as part of a new library, select Save Shapes from the pop-up palette menu. You can also use the Preset Manager to manage libraries of custom shapes. For more information, see "Managing libraries with the Preset Manager (Photoshop)" on page 43.

Creating rasterized shapes

You can create a rasterized (or bitmap) shape by making a selection and filling it with the foreground color. You cannot edit a rasterized shape as a vector object. Raster shapes are created using the current foreground color.

To create a rasterized shape (Photoshop):

1 Select a layer. You cannot create a rasterized shape on a vector-based layer (for example, a type layer).

2 Select a shape tool, and click the Fill Pixels button in the options bar.

3 Set the following options in the options bar:

- Mode to control how the shape will affect the existing pixels in the image. (See "Selecting a blending mode" on page 171.)
- Opacity to determine to what degree the shape will obscure or reveal the pixels beneath it. A shape with 1% opacity appears nearly transparent, while one with 100% opacity appears completely opaque.
- Anti-Aliased to blend the shape's edge pixels with the surrounding pixels.

4 Set additional tool-specific options, and draw a shape. For more information, see "Using the shape tools" on page 155 and "Using the pen tools (Photoshop)" on page 160.

Note: *In Photoshop, you can easily switch between drawing tools by clicking a tool button in the options bar.*

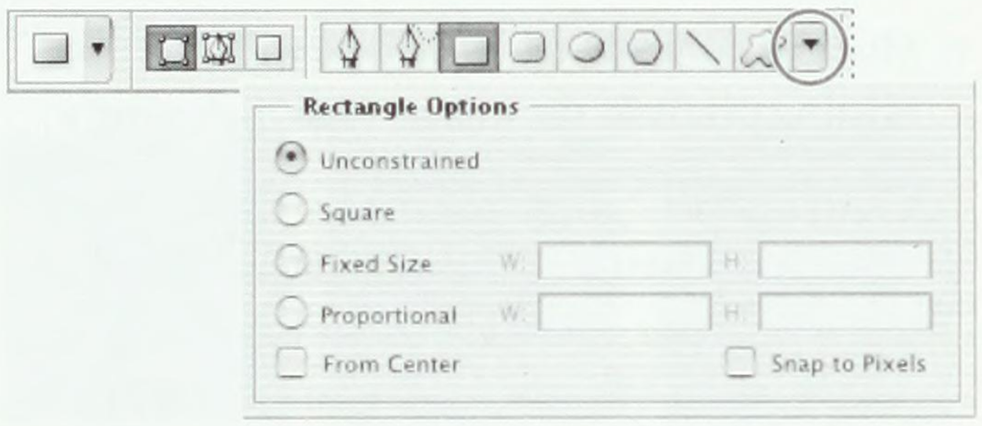
To create a rasterized shape (ImageReady):

1 Select a layer that contains the shape you want to rasterize.

2 Choose Layer > Rasterize > Shape.

Setting shape tool options

Each shape tool provides specific options; for example, you can set options that allow you to draw a rectangle with fixed dimensions or a line with arrowheads. The available options vary by tool. In Photoshop, options are shown in a pop-up menu. In ImageReady, available options are displayed in the options bar.



(Photoshop) Click the inverted arrow to display options for the selected shape.

To set tool-specific options:

1 Select the Rectangle tool ▭, Rounded Rectangle tool ▢, Ellipse tool ⬭, Polygon tool ⬡ (Photoshop), Line tool ╲, or Custom Shape tool (Photoshop).

2 Set tool options in the options bar.
In Photoshop, click the inverted arrow ▾ next to the shape buttons to view the options:

Arrowheads Start and End Adds arrowheads to a line. Select the Line tool and then select Start to add an arrow to the beginning of the line; select End to add an arrow to the end of the line. Select both options to add arrows on both ends. In ImageReady, click Shape to define the shape of the arrowhead; in Photoshop, the shape options appear in the pop-up dialog box. Enter values for Width and Length to specify the proportions of the arrowhead as a percentage of the line width (10% to 1000% for Width, and 10% to 5000% for Length). Enter a value for the concavity of the arrowhead (from –50% to +50%). The concavity value defines the amount of curvature on the widest part of the arrowhead, where the arrowhead meets the line.

Note: *In Photoshop, you can also edit an arrowhead directly using the vector selection and drawing tools.*

Circle (Photoshop) Constrains an ellipse to a circle.

Corner Radius (ImageReady) Specifies the corner radius for rendering a rounded rectangle or tab rectangle.

Defined Proportions (Photoshop) Renders a custom shape based on the proportions with which it was created.

Defined Size (Photoshop) Renders a custom shape based on the size at which it was created.

Fixed Size Renders a rectangle, rounded rectangle, ellipse, or custom shape as a fixed shape based on the values you enter in the Width and Height text boxes.

From Center (Photoshop) Renders a rectangle, rounded rectangle, ellipse, or custom shape from the center.

Indent Sides By (Photoshop) Renders a polygon as a star. Enter a percentage in the text box to specify the portion of the star's radius taken up by the points. A 50% setting creates points that are half the total radius of the star; a larger value creates sharper, thinner points; a smaller value creates fuller points.

Proportional (Photoshop) Renders a rectangle, rounded rectangle, or ellipse as a proportional shape based on the values you enter in the Width and Height text boxes.

Radius (Photoshop) For rounded rectangles, specifies the corner radius. For polygons, specifies the distance from the center of a polygon to the outer points.

Sides (Photoshop) Specifies the number of sides in a polygon.

Smooth Corners or Smooth Indents (Photoshop) Renders a polygon with smooth corners or indents.

Snap to Pixels (Photoshop) Snaps edges of a rectangle or rounded rectangle to the pixel boundaries.

Square (Photoshop) Constrains a rectangle or rounded rectangle to a square.

Unconstrained (Photoshop) Lets you set the width and height of a rectangle, rounded rectangle, ellipse, or custom shape by dragging.

Weight Determines the width of a line in pixels.

Editing shapes (Photoshop)

A shape is a fill layer linked to a vector mask. You can easily change the fill to a different color, a gradient, or a pattern by editing the shape's fill layer. You can also edit the shape's vector mask to modify the shape outline, and apply a style to the layer.

For information on transforming shapes in ImageReady, see "Using the Free Transform command" on page 145.

To change the color of a shape:

Double-click the shape layer's thumbnail in the Layers palette, and choose a different color using the color picker.

To fill a shape with a pattern or gradient:

1 Select a shape layer in the Layers palette.

2 Do one of the following:

- Choose Layer > Change Layer Content > Gradient, and set gradient options.
- Choose Layer > Change Layer Content > Pattern, and set pattern options.

For more information, see "Using adjustment layers and fill layers (Photoshop)" on page 223.

To modify the outline of a shape:

Click the shape layer's vector mask thumbnail in the Layers palette or Paths palette. Then change the shape using the shape and pen tools.

For more information on moving, reshaping, copying, or deleting path components, see Photoshop Help.

Using the pen tools (Photoshop)

You can create or edit straight lines, curves, or freeform lines and shapes using the pen tools. The pen tools can be used in conjunction with the shape tools to create complex shapes.

Drawing with the Pen tool

The Pen tool lets you create straight lines and smooth flowing curves with greater precision than is possible with the Freeform Pen tool. For most users, the Pen tool provides the best control and greatest accuracy for drawing.

To draw with the Pen tool:

1 Select the Pen tool .

2 Set the following tool-specific options:

- To add an anchor point when you click a line segment and delete an anchor point when you click it, select Auto Add/Delete in the options bar.

For more information on adding, deleting, or converting anchor points, see Photoshop Help.

- To preview path segments as you draw, click the inverted arrow ▾ next to the shape buttons in the options bar, and select Rubber Band.

3 Position the pen pointer where you want to begin to draw, and click to define the first anchor point.

4 Click or drag to set anchor points for additional segments.

5 Complete the path:

- To end an open path, Ctrl-click (Windows) or Command-click (Mac OS) away from the path.
- To close a path, position the pen pointer over the first anchor point. A small loop appears next to the pen tip when it is positioned correctly. Click to close the path.

To learn more about anchor points, direction lines, and direction points, see Photoshop Help.

Drawing straight segments with the pen tool

The simplest segment you can draw with the Pen tool is a straight segment, made by clicking to create anchor points.

To draw straight segments:

1 Position the pen pointer where you want the straight segment to begin, and click to define the first anchor point.

2 Click again where you want the first segment of the straight line to end, or Shift-click to constrain the angle of the segment to a multiple of 45°.

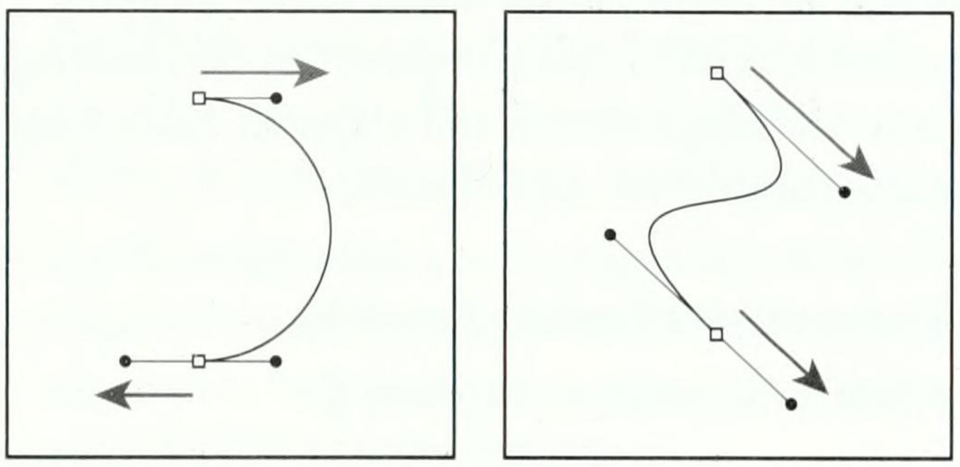
3 Continue clicking to set anchor points for additional segments. The last anchor point is always a solid square, indicating it is selected. Previously defined anchor points become hollow squares as you add further anchor points.

If the Auto Add/Delete option is selected in the options bar, you can click an existing point to delete it.

Drawing curves with the Pen tool

You create curves by dragging the Pen tool in the direction you want the curve to go. Keep these guidelines in mind when drawing curves:

- Always drag the first direction point in the direction of the bump of the curve, and drag the second direction point in the opposite direction to create a single curve. Dragging both direction points in the same direction creates an "S" curve.



Drag in the opposite direction to create a smooth curve. Drag in the same direction to create an "S" curve.

- When drawing a series of smooth curves, draw one curve at a time, placing anchor points at the beginning and end of each curve, not at the tip of the curve.
- To decrease the file size and reduce the potential for printing errors, use as few anchor points as possible, and place them as far apart as possible.

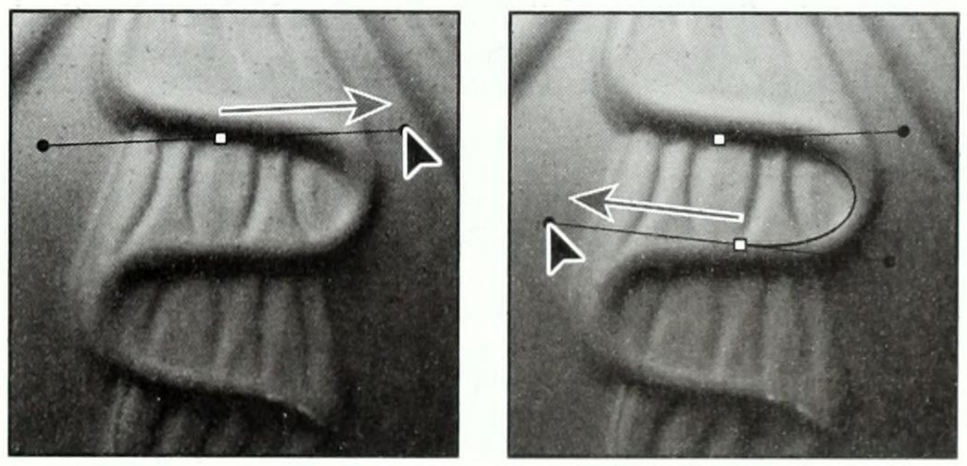
To learn more about anchor points, direction lines, and direction points, see Photoshop Help.

To draw a curve:

1 Position the pointer where you want the curve to begin, and hold down the mouse button. The first anchor point appears, and the pointer changes to an arrowhead.

2 Drag in the direction you want the curve segment to be drawn. As you drag, the pointer leads one of two direction points. Hold down the Shift key to constrain the tool to multiples of 45°, and release the mouse button once you have positioned the first direction point.

The length and slope of the direction line determine the shape of the curve segment. You can adjust one or both sides of the direction line later.

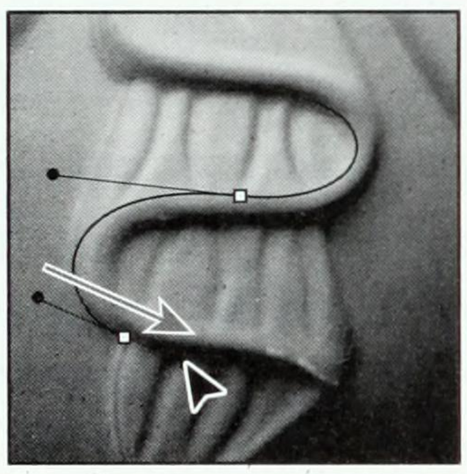


Drag in the direction of the curve to set the first anchor point. Drag in the opposite direction to complete the curve segment.

3 Position the pointer where you want the curve segment to end, and drag in the opposite direction to complete the segment.

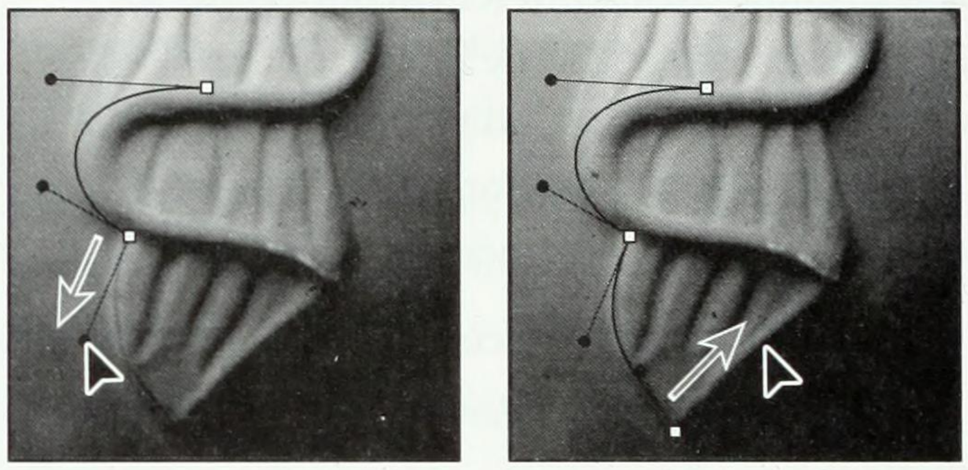
4 Do one of the following:

- To draw the next segment of a smooth curve, position the pointer where you want the next segment to end, and drag away from the curve.



Drag away from the curve to create the next segment.

- To change the direction of the curve sharply, release the mouse button, and then Alt-drag (Windows) or Option-drag (Mac OS) the direction point in the direction of the curve. Release Alt (Windows) or Option (Mac OS) and the mouse button, reposition the pointer where you want the segment to end, and drag in the opposite direction to complete the curve segment.
- To break out the direction lines of an anchor point, Alt-drag (Windows) or Option-drag (Mac OS) the lines.



Alt-drag or Option-drag the direction point toward the curve. Release the key, and drag in the opposite direction.

Drawing with the Freeform Pen tool

The Freeform Pen tool lets you draw as if you were drawing with a pencil on paper. Anchor points are added automatically as you draw. You do not determine where the points are positioned, but you can adjust them once the path is complete.

The Magnetic Pen is an option of the Freeform Pen tool that lets you draw a path that snaps to the edges of defined areas in your image. You can define the range and sensitivity of the snapping behavior, as well as the complexity of the resulting path. The Magnetic Pen and Magnetic Lasso tools share many of the same options.

To draw with the Freeform Pen tool:

1 Select the Freeform Pen tool .

2 To control how sensitive the final path is to the movement of your mouse or stylus, click the inverted arrow ▾ next to the shape buttons in the options bar, and enter a value between 0.5 and 10.0 pixels for Curve Fit. A higher value creates a simpler path with fewer anchor points.

3 Drag the pointer in the image. As you drag, a path trails behind the pointer. When you release the mouse, a work path is created.

4 To continue the existing freehand path, position the pen pointer on an endpoint of the path, and drag.

5 To complete the path, release the mouse.
To create a closed path, drag the line to the initial point of the path (a circle appears next to the pointer when it is aligned).

To learn more about anchor points, direction lines, and direction points, see Photoshop Help.

To draw using the magnetic pen options:

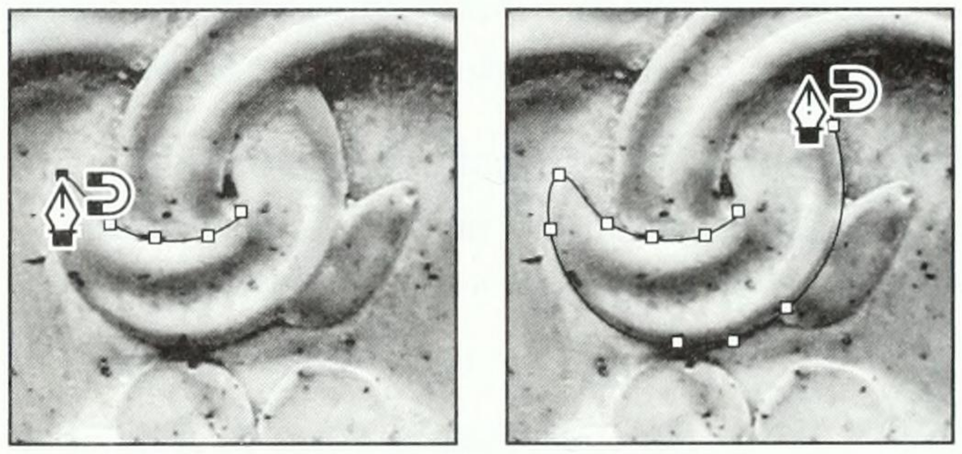
1 To convert the Freeform Pen tool to the Magnetic Pen tool, select Magnetic in the options bar, or click the inverted arrow next to the shape buttons in the options bar, select Magnetic, and set the following:

- For Width, enter a pixel value between 1 and 256. The Magnetic Pen detects edges only within the specified distance from the pointer.
- For Contrast, enter a percentage value between 1 and 100 to specify the contrast between pixels required to be considered an edge. Use a higher value for low contrast images.
- For Frequency, enter a value between 0 and 100 to specify the rate at which the Pen sets anchor points. A higher value anchors the path in place more quickly.
- If you are working with a stylus tablet, select or deselect Pen Pressure. When this option is selected, an increase in pen pressure causes the width to decrease.

2 Click in the image to set the first fastening point.

3 To draw a freehand segment, move the pointer or drag along the edge you want to trace.

The most recent segment of the border remains active. As you move the pointer, the active segment snaps to the strongest edge in the image, connecting the pointer to the last fastening point. Periodically, the Magnetic Pen adds fastening points to the border to anchor previous sections.



Click to add fastening points, and continue tracing.

4 If the border doesn't snap to the desired edge, click once to add a fastening point manually and to keep the border from moving. Continue to trace the edge and add fastening points as needed. If needed, press Delete to remove the last fastening point.

5 To dynamically modify the properties of the Magnetic Pen, do one of the following:

- Alt-drag (Windows) or Option-drag (Mac OS) to draw a freehand path.

- Alt-click (Windows) or Option-click (Mac OS) to draw straight segments.
- Press the [key to decrease the Magnetic Pen width by 1 pixel; press the] key to increase the pen width by 1 pixel.

6 Complete the path:

- Press Enter (Windows) or Return (Mac OS) to end an open path.
- Double-click to close the path with a magnetic segment.
- Hold down Alt (Windows) or Option (Mac OS), and double-click to close the path with a straight segment.

Working with paths (Photoshop)

A path is composed of one or more *path components*—collections of one or more anchor points joined by segments. Because they take up less disk space than pixel-based data, paths can be used for long-term storage of simple masks.

To learn more about paths, see Photoshop Help.

Chapter 8: Painting

The painting tools, gradient tools, Paint Bucket tool, and Fill command let you change the color of pixels and create colored areas in an image. You can select colors using the Color palette, Swatches palette, or color picker.

Using the painting tools (Photoshop)

Painting involves changing the colors of pixels using a painting tool. You can apply colors gradually, with soft edges and transitions, and manipulate individual pixels using powerful filter effects.

Photoshop provides the Brush tool and the Pencil tool to let you paint with the current foreground color. By default, the Brush tool creates soft strokes of color and the Pencil tool creates hard-edged, freehand lines. However, you can change these default characteristics by resetting the tool's brush options. You can also use the Brush tool as an airbrush to apply sprays of color to an image.

To use the Brush tool or Pencil tool:

1 Specify a foreground color. (See "Choosing foreground and background colors" on page 179.)

2 Select the Brush tool or Pencil tool.

3 Do the following in the options bar:

- Choose a brush and set brush options. (See "Working with brushes" on page 167.)
- Choose a bending mode from the Mode menu. (See "Selecting a blending mode" on page 171.)
- Specify an opacity by dragging the Opacity slider.
- For the Brush tool, specify a flow rate by dragging the Flow slider.

For more information on specifying opacity, flow, strength, or exposure, see Photoshop Help.

- (Photoshop) Click the Airbrush button to use the brush as an airbrush.

For more information on the airbrush option, see Photoshop Help.

- For the Pencil tool, select Auto Erase to paint the background color over areas containing the foreground color. (See "Using the Auto Erase option" on page 174.)

4 Do one or more of the following:

- Drag in the image to paint.
- To draw a straight line, click a starting point in the image. Then hold down Shift, and click an ending point.
- When using the Brush tool as an airbrush, hold down the mouse button without dragging to build up color.

Using the painting tools

The Paintbrush tool and the Pencil tool let you paint the current foreground color on an image. The tools create different effects:

- The Paintbrush tool creates soft strokes of color.
- The Pencil tool creates hard-edged freehand lines.

To use the Paintbrush tool, Pencil tool:

1 Specify a foreground color. (See "Choosing foreground and background colors" on page 179.)

2 Select the Paintbrush tool or Pencil tool.

3 Do the following in the options bar:

- Choose a preset brush. (See "Working with brushes" on page 167.)
- Specify a blending mode. (See "Selecting a blending mode" on page 171.)
- Specify an opacity.

For more information on specifying opacity, flow, strength, or exposure, see Photoshop Help.

- For the Pencil tool, select Auto Erase to paint the background color over areas containing the foreground color. (See "Using the Auto Erase option" on page 174.)

4 Do one or more of the following:

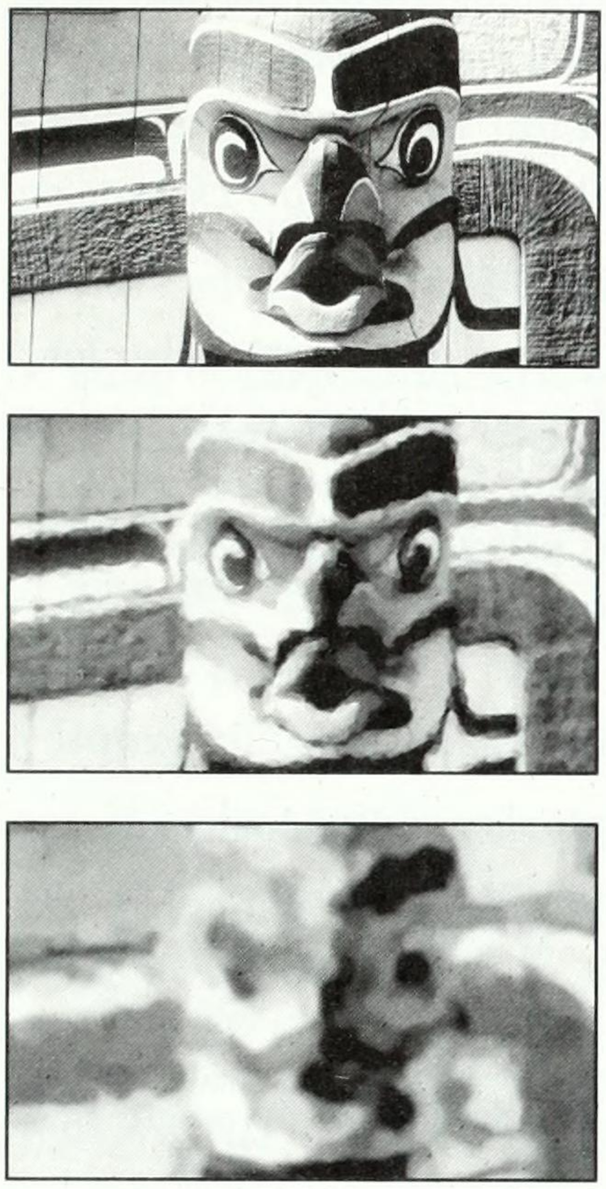
- Drag in the image to paint.
- To draw a straight line, click a starting point in the image. Then hold down Shift, and click an ending point.

Using the Art History Brush tool (Photoshop)

The Art History Brush tool lets you paint with stylized strokes, using the source data from a specified history state or snapshot. By experimenting with different paint style, size, and tolerance options, you can simulate the texture of painting with different colors and artistic styles.

Like the History Brush tool, the Art History Brush tool uses a specified history state or snapshot as the source data. The History Brush tool, however, paints by recreating the specified source data, while the Art History Brush tool uses that data along with the options you set to create different colors and artistic styles.

For a variety of visual effects, experiment with applying filters or filling an image with a solid color before painting with the Art History Brush tool. Also try increasing the size of the image by a factor of 4 to soften the details.



Example of using the Art History Brush tool
***A.** Original **B.** Using a small brush **C.** Using a large brush*

To use the Art History Brush tool:

1 In the History palette, click the left column of the state or snapshot to use as the source for the Art History Brush tool. A brush icon appears next to the source history state.

2 Select the Art History Brush tool.

3 Do the following in the options bar:

- Choose a brush and set brush options. (See "Working with brushes" on page 167.)
- Specify a blending mode and opacity for the paint. (See "Setting options for painting and editing tools" on page 171.)
- Choose an option from the Style menu to control the shape of the paint stroke.
- For Area, enter a value to specify the area covered by the paint strokes. The greater the size, the larger the covered area and the more numerous the strokes.
- For Tolerance, enter a value or drag the slider to limit the regions where paint strokes can be applied. A low tolerance lets you paint unlimited strokes anywhere in the image. A high tolerance limits paint strokes to areas that differ considerably from the color in the source state or snapshot.

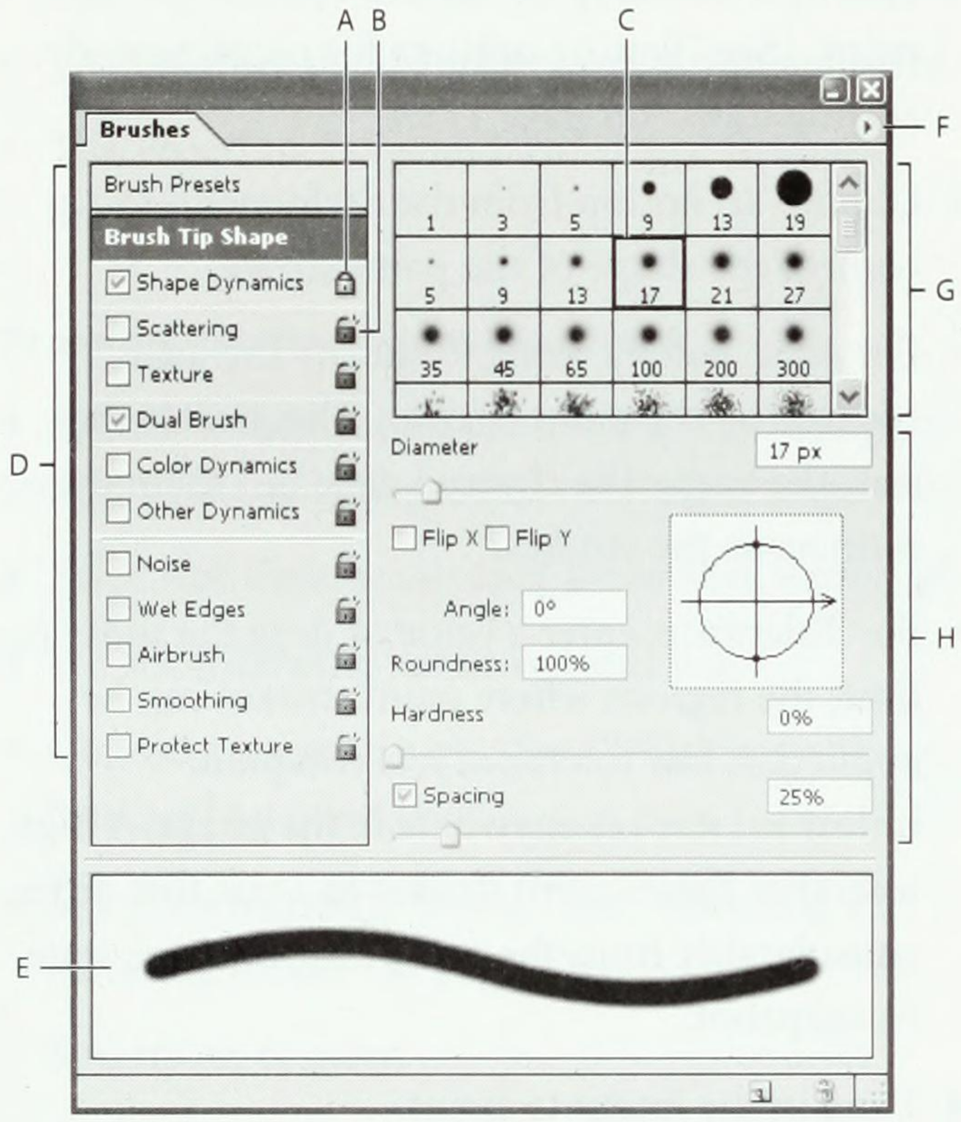
4 Drag in the image to paint.

Working with brushes

Working with brushes is an important part of using the painting and editing tools. The brush you select determines many characteristics of the resulting stroke. Photoshop and ImageReady provide a variety of preset brushes to fill a wide range of uses. In Photoshop, you can also create custom brushes using the Brushes palette.

Using the Brushes palette (Photoshop)

The Brushes palette lets you select preset brushes and design custom brushes.



Brushes palette with Brush Tip Shape options displayed ***A.*** *Locked* ***B.*** *Unlocked* ***C.*** *Selected brush tip* ***D.*** *Brush settings* ***E.*** *Brush stroke preview* ***F.*** *Pop-up menu* ***G.*** *Brush tip shapes (available when Brush Tip Shape option is selected)* ***H.*** *Brush options*

Displaying the Brushes palette Choose Window > Brushes, or click the palette button on the right side of the options bar if you have a painting tool, erasing tool, toning tool, or focus tool selected.

Displaying options in the Brushes palette Select an item name on the left side of the palette. The available options for the selected item appear on the right side of the palette.

Click the check box to the left of the item name to enable or disable the item without viewing its options.

Selecting preset brushes

The Brush pop-up palette in the options bar for the painting and editing tools lets you view, select, and load preset brushes. In Photoshop, you can also use the Brushes palette to view, select, and load preset brushes.

To display the Brush pop-up palette:

1 Select a painting tool or editing tool.

2 Click the brush sample in the options bar.

To select a preset brush:

1 Click a brush in the Brush pop-up palette or Brushes palette.

Note: *If you are using the Brushes palette, be sure that Brush Presets on the left side of the palette is selected to view the loaded presets.*

2 (Photoshop) Specify a diameter for the brush by dragging the slider or entering a value. If the brush has a dual tip, both the primary and dual brush tips are scaled.

For more information on creating dual brushes, see Photoshop Help.

3 (Photoshop) Click Use Sample Size to use the original diameter of the brush tip. This option is available only if the brush tip shape is based on a sample.

To change how preset brushes are displayed (Photoshop):

Choose a display option from the Brush pop-up palette menu or Brushes palette menu:

- Text Only to view the brushes as a list.
- Small or Large Thumbnail to view the brushes as thumbnails.
- Small or Large List to view the brushes as a list with thumbnails.
- Stroke Thumbnail to view a sample brush stroke with each brush thumbnail.

To dynamically preview brush strokes in the Brushes palette, make sure that Brush Preset is selected, and then position the pointer over a brush until the tool tip appears. Move the pointer over different brushes. The preview area at the bottom of the palette will display sample brush strokes.

To load a library of preset brushes:

Choose one of the following from the Brush pop-up palette menu or Brushes palette menu:

- Load Brushes to add a library to the current list. Select the library file you want to use, and click Load.
- Replace Brushes to replace the current list with a different library. Select the library file you want to use, and click Load.
- A library file (displayed at the bottom of the palette menu). Click OK to replace the current list, or click Append to append the current list.

Note: *You can also use the Preset Manager to load and reset brush libraries. For more information, see "Managing libraries with the Preset Manager (Photoshop)" on page 43.*

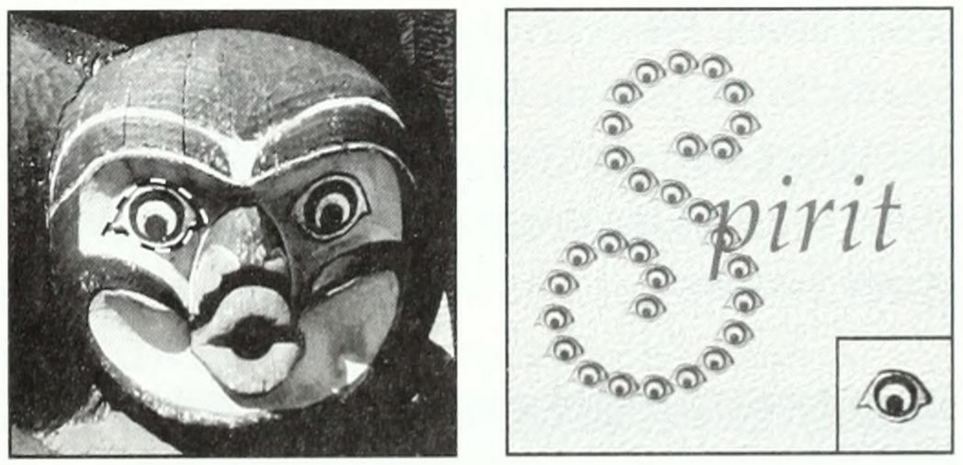
To return to the default library of preset brushes:

Choose Reset Brushes from the Brush pop-up palette menu or Brushes palette menu. You can either replace the current list or append the default library to the current list.

Customizing brush tips (Photoshop)

You can customize brush tips by editing their options and create new brush tip shapes by sampling pixels in an image. The brush tip you select determines the shape, diameter, and other characteristics of a brush mark.

To learn more about setting brush tip shape options, see Photoshop Help.



Selection sampled to create a custom brush (left), and brush stroke using the custom brush (right)

To create a new brush tip shape:

1 Use any selection tool to select a part of an image to use as a custom brush. Feather should be set to 0 pixels if you want to create a brush with a sharp edge. The brush shape can be up to 2500 pixels by 2500 pixels in size.

If you want to define a brush with soft edges, select pixels with gray values. (Colored brush shapes appear as gray values.)

2 Choose Edit > Define Brush Preset.

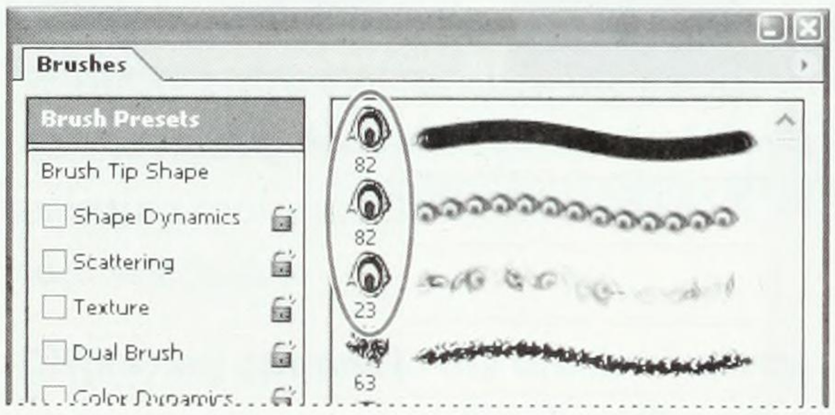
3 Name the brush, and click OK.

To lock brush tip shape attributes:

To lock a brush tip, click the unlock icon. To unlock the tip, click the lock icon.

Creating and managing preset brushes (Photoshop)

After you customize a brush, you can save it as a preset brush. Preset brushes appear in the Brushes palette, Brush pop-up palette in the options bar, and Preset Manager. You can create libraries of preset brushes, rename preset brushes, and delete preset brushes.



Three preset brushes created from one custom brush

Note: *New preset brushes are saved in a Preferences file so that they persist between editing sessions. If this file is deleted or damaged, or if you reset brushes to the default library, the new presets will be lost. To permanently save new preset brushes, save them in a library.*

To create a new preset brush:

1 Customize a brush.

2 Do one of the following in the Brushes palette or Brush pop-up palette:

- Choose New Brush Preset from the palette menu, enter a name for the preset brush, and click OK.
- Click the Create New Brush button.

To rename a preset brush:

Do one of the following:

- Select a brush in the Brush pop-up palette or Brushes palette, and choose Rename Brush from the palette menu. Enter a new name for the brush, and click OK.
- If the Brushes palette is set to display brushes as thumbnails, double-click a brush, enter a new name, and click OK.
- If the Brushes palette is set to display brushes as a list or text only, double-click a brush, enter a new name inline, and press Enter (Windows) or Return (Mac OS).

To delete a preset brush:

Do one of the following:

- In the Brush pop-up palette or Brushes palette, select a brush, and choose Delete Brush from the palette menu.
- In the Brush pop-up palette or Brushes palette, Alt-click (Windows) or Option-click (Mac OS) the brush you want to delete.
- In the Brushes palette, select a brush and click the Trash button, or drag a brush to the Trash button.

To save a set of preset brushes as a library:

1 Choose Save Brushes from the Brush pop-up palette menu or Brushes palette menu.

2 Choose a location for the brush library, enter a filename, and click Save.

You can save the library anywhere. However, if you place the library file in the Presets/Brushes folder inside the Photoshop program folder, the library name will appear at the bottom of the Brush pop-up palette menu and Brushes palette menu after you restart Photoshop.

Note: *You can also use the Preset Manager to rename, delete, and save libraries of preset brushes. For more information, see "Managing libraries with the Preset Manager (Photoshop)" on page 43.*

Setting options for painting and editing tools

You set options for a painting or editing tool in the options bar.

Selecting a blending mode

The blending mode specified in the options bar controls how pixels in the image are affected by a painting or editing tool. It's helpful to think in terms of the following colors when visualizing a blending mode's effect:

- The *base color* is the original color in the image.
- The *blend color* is the color being applied with the painting or editing tool.
- The *result color* is the color resulting from the blend.

For information on blending modes, see Photoshop Help.

Using the Eraser tool

The Eraser tool changes pixels in the image as you drag through them. If you're working in the background or in a layer with transparency locked, the pixels change to the background color; otherwise, the pixels are erased to transparency. You can also use the eraser to return the affected area to a state selected in the History palette.

To use the Eraser tool:

1 Select the Eraser tool .

2 Do the following in the options bar:

- Choose a brush and set brush options (Photoshop), or choose a preset brush (ImageReady). (See "Working with brushes" on page 167.) This option is not available for Block mode.
- Choose a mode for the eraser—Brush (Photoshop), Paintbrush (ImageReady), Airbrush (ImageReady), Pencil, or Block.
- Specify an opacity to define the strength of the erasure. An opacity of 100% erases pixels completely. A lower opacity erases pixels partially. (This option is not available for Block mode in Photoshop.)
- (Photoshop) In Brush mode, specify a flow rate.

For more information on specifying opacity, flow, strength, or exposure, see Photoshop Help.

- (Photoshop) In Brush mode, click the airbrush button to use the brush as an airbrush. Alternately, select the Airbrush option in the Brushes palette.

For more information on the airbrush option, see Photoshop Help.

- (Photoshop) To erase to a saved state or snapshot of the image, click the left column of the state or snapshot in the History palette, and then select Erase to History in the options bar. (See "Painting with a state or snapshot of an image (Photoshop)" on page 29.)

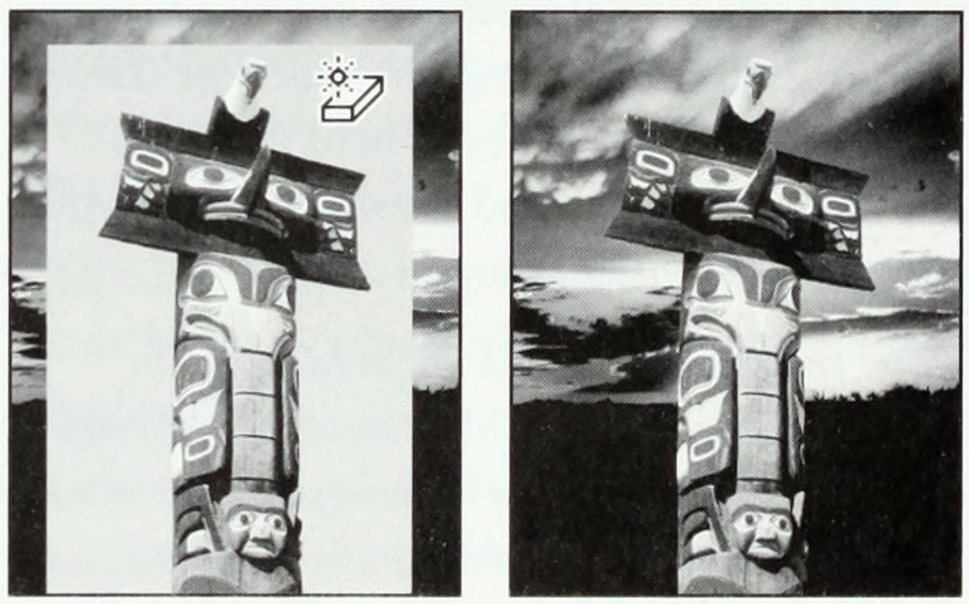
For more information on painting with a state or snapshot of an image, see Photoshop Help.

(Photoshop) To temporarily use the Eraser tool in Erase to History mode, hold down Alt (Windows) or Option (Mac OS) as you drag in the image.

3 Drag through the area you want to erase.

Using the Magic Eraser tool

When you click in a layer with the Magic Eraser tool, the tool automatically changes all similar pixels. If you're working in the background, or in a layer with locked transparency, the pixels change to the background color; otherwise, the pixels are erased to transparency. You can choose to erase contiguous pixels only or all similar pixels on the current layer.



Example of erasing similar pixels

To use the Magic Eraser tool:

1 Select the Magic Eraser tool .

2 Do the following in the options bar:

- Enter a tolerance value to define the range of colors that can be erased. A low tolerance erases pixels within a range of color values very similar to the pixel you click. A high tolerance erases pixels within a broader range.
- Select Anti-aliased to smooth the edges of the area you erase.
- Select Contiguous to erase only pixels contiguous to the one you click, or deselect to erase all similar pixels in the image.
- Select Use All Layers to sample the erased color using combined data from all visible layers.
- Specify an opacity to define the strength of the erasure. An opacity of 100% erases pixels completely. A lower opacity erases pixels partially.

3 Click in the part of the layer you want to erase.

Using the Background Eraser tool (Photoshop)

The Background Eraser tool lets you erase pixels on a layer to transparency as you drag; this allows you to erase the background while maintaining the edges of an object in the foreground. By specifying different sampling and tolerance options, you can control the range of the transparency and the sharpness of the boundaries.

The background eraser samples the color in the center of the brush, also called the hot spot, and deletes that color wherever it appears inside the brush. It also performs color extraction at the edges of any foreground objects, so that color halos are not visible if the foreground object is later pasted into another image.

Note: *The background eraser overrides the lock transparency setting of a layer.*

To use the Background Eraser tool:

1 In the Layers palette, select the layer containing the areas you want to erase.

2 Select the Background Eraser tool .

3 Click the brush sample in the options bar and set brush options in the pop-up palette:

- Choose settings for the Diameter, Hardness, Spacing, Angle, and Roundness options (see "Customizing brush tips (Photoshop)" on page 169).
- If you're using a pressure-sensitive digitizing tablet, choose options from the Size and Tolerance menus to vary the size and tolerance of the background eraser over the course of a stroke. Choose Pen Pressure to base the variation on the pen pressure. Choose Stylus Wheel to base the variation on the position of the pen thumbwheel. Choose Off to not vary the size or tolerance.

4 Do the following in the options bar:

- Choose a Limits mode for erasing: Discontiguous to erase the sampled color wherever it occurs under the brush, Contiguous to erase areas that contain the sampled color and are connected to one another, and Find Edges to erase connected areas containing the sampled color while better preserving the sharpness of shape edges.
- For Tolerance, enter a value or drag the slider. A low tolerance limits erasure to areas that are very similar to the sampled color. A high tolerance erases a broader range of colors.
- Select Protect Foreground Color to prevent the erasure of areas that match the foreground color in the toolbox.
- Choose a Sampling option: Continuous to sample colors continuously as you drag, Once to erase only areas containing the color that you first click, and Background Swatch to erase only areas containing the current background color.

5 Drag through the area you want to erase.

The Background Eraser tool pointer appears as a brush shape with a cross hair indicating the tool's hot spot ⊕.

Using the Auto Erase option

The Auto Erase option for the Pencil tool lets you paint the background color over areas containing the foreground color.

To use the Auto Erase option:

1 Specify foreground and background colors. (See "Choosing foreground and background colors" on page 179.)

2 Select the Pencil tool .

3 Select Auto Erase in the options bar.

4 Drag over the image.

If the center of the cursor is over the foreground color when you begin dragging, the area is erased to the background color. If the center of the cursor is over an area that doesn't contain the foreground color when you begin dragging, the area is painted with the foreground color.

Using the Gradient tool (Photoshop)

The Gradient tool creates a gradual blend between multiple colors. You can choose from preset gradient fills or create your own.

Note: *The Gradient tool cannot be used with images in Bitmap, indexed-color, or 16-bit-per-channel mode.*

To learn about different ways to use gradients, see Photoshop Help.

Applying a gradient fill

You fill an area with a gradient by dragging in the image. The starting point (where the mouse is pressed) and ending point (where the mouse is released) affect the gradient appearance, depending on the Gradient tool used.

To apply a gradient fill:

1 To fill part of the image, select the desired area. Otherwise, the gradient fill is applied to the entire active layer.

2 Select the Gradient tool.

3 Choose a gradient fill in the options bar:

- Click the triangle next to the gradient sample to pick a preset gradient fill.
- Click inside the gradient sample to view the Gradient Editor. Select a preset gradient fill, or create a new gradient fill. Then click OK.

To learn about creating smooth gradients fills, see Photoshop Help.

4 Select an option for applying the gradient fill in the options bar:

- Linear gradient to shade from the starting point to the ending point in a straight line.
- Radial gradient to shade from the starting point to the ending point in a circular pattern.
- Angle gradient to shade in a counter-clockwise sweep around the starting point.
- Reflected gradient to shade using symmetric linear gradients on either side of the starting point.
- Diamond gradient to shade from the starting point outward in a diamond pattern. The ending point defines one corner of the diamond.

5 Do the following in the options bar:

- Specify a blending mode and opacity for the paint. (See "Setting options for painting and editing tools" on page 171.)
- To reverse the order of colors in the gradient fill, select Reverse.
- To create a smoother blend with less banding, select Dither.
- To use a transparency mask for the gradient fill, select Transparency.

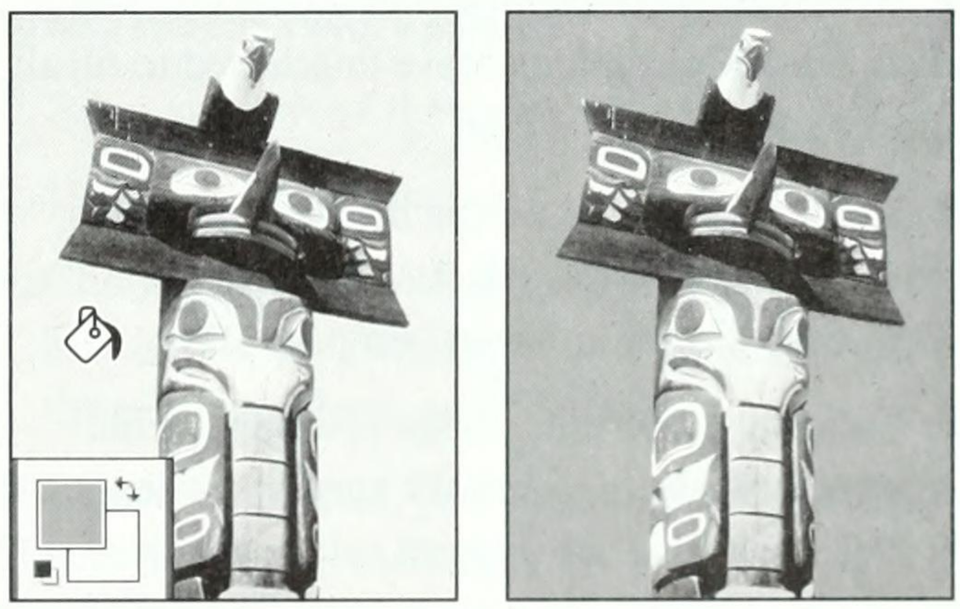
For more information on specifying gradient transparency, see Photoshop Help.

6 Position the pointer in the image where you want to set the starting point of the gradient, and drag to define the ending point. To constrain the line angle to a multiple of 45°, hold down Shift as you drag.

Using the Paint Bucket tool

The Paint Bucket tool fills adjacent pixels that are similar in color value to the pixels you click.

Note: *The Paint Bucket tool cannot be used with images in Bitmap mode.*



Using the Paint Bucket tool to fill pixels similar in color value with the foreground color

To use the Paint Bucket tool:

1 Specify a foreground color. (See "Choosing foreground and background colors" on page 179.)

2 Select the Paint Bucket tool .

3 (Photoshop) Specify whether to fill the selection with the foreground color or with a pattern. (See "Filling and stroking selections and layers" on page 176.)

4 Specify a blending mode and opacity for the paint. (See "Setting options for painting and editing tools" on page 171.)

5 Enter the tolerance for the fill.

The tolerance defines how similar in color a pixel must be to be filled. Values can range from 0 to 255. A low tolerance fills pixels within a range of color values very similar to the pixel you click. A high tolerance fills pixels within a broader range.

6 To smooth the edges of the filled selection, select Anti-aliased. (See "Softening the edges of a selection" on page 118.)

7 To fill only pixels contiguous to the one you click, select Contiguous; leave unselected to fill all similar pixels in the image.

8 To fill pixels based on the merged color data from all visible layers, select All Layers. (See "Sampling from layers" on page 203.)

9 Click the part of the image you want to fill. All specified pixels within the specified tolerance are filled with the foreground color or pattern.

If you're working on a layer and don't want to fill transparent areas, make sure that the layer's transparency is locked in the Layers palette. (See "Locking layers" on page 202.)

Filling and stroking selections and layers

Photoshop and ImageReady provide a variety of ways to fill a selection or a layer with colors and patterns. You can also paint a border around a selection or a layer. Layer styles allow you to fill or stroke a selection or layer to create a live editable effect, while you can also paint a fill or border to create a softer effect. (See "Managing Layers" on page 203.)

To increase the contrast between your image and the surrounding work canvas, you can fill the canvas with a color.

Filling a selection or layer with colors or patterns

You can fill a selection or layer with the foreground color, the background color, or a pattern. In Photoshop, you can use patterns from the pattern libraries provided or create your own patterns. You can also fill a shape using the Color, Gradient, or Pattern Overlay effects or the Solid Color, Gradient, or Pattern fill layers on the Layers palette. When you use fill layers to fill a selection, you can easily change the type of layer being used. For more information, see "Using adjustment layers and fill layers (Photoshop)" on page 223.

To fill a selection or a layer with a foreground or background color:

1 Specify a foreground or background color. (See "Choosing foreground and background colors" on page 179.)

2 Select the area you want to fill. To fill an entire layer, select the layer in the Layers palette.

3 Choose Edit > Fill to fill the selection or layer. Or to fill a path, select the path and choose Fill Path from the Paths palette menu.

4 In the Fill dialog box, for Use, choose one of the following options or select a Custom Pattern:

- Foreground Color, Background Color, Black, 50% Gray, or White to fill the selection with the specified color.
- Color to fill with a color you select from the Color Picker.
- Pattern to fill the selection with a pattern. Click the inverted arrow ▾ next to the pattern sample and select a pattern from the pop-up palette. You can load additional patterns using the pop-up palette menu. Select the name of a library of patterns or choose Load Patterns and navigate to the folder containing the patterns you want to use.
- History to restore the selected area to a state or snapshot of the image. (See "Making a snapshot of an image (Photoshop)" on page 28.)

Note: *If you fill a CMYK image using the Black option, Photoshop fills all the channels with 100% black. This may result in more ink than is allowable by the printer. For best results when filling a CMYK image, use the Foreground option with the foreground color set to an appropriate black.*

5 Specify the blending mode and opacity for the paint. (See "Selecting a blending mode" on page 171 and "Setting options for painting and editing tools" on page 171.)

6 If you're working in a layer and want to fill only areas containing pixels, choose Preserve Transparency.

7 Click the OK button to apply the fill.

To apply a foreground color fill only to the areas that contain pixels, press Alt+Shift+Backspace (Windows) or Option+Shift+Delete (Mac OS). This preserves the transparency of the layer. To apply a background color fill only to the areas that contain pixels, press Ctrl+Shift+Backspace (Windows) or Command+Shift+Delete (Mac OS).

To fill the work canvas:

1 Set the foreground color you want to use for the canvas.

2 Select the Paint Bucket tool .

3 In the options bar, set Fill to Foreground.

4 Hold down Shift, and click in the work canvas.

Note: *You need to be in full screen mode and viewing the menus to fill the work canvas.*

To fill a selection with a pattern:

1 Select the part of the image you want to fill.

2 Do one of the following:

- Choose Edit > Fill. In the Fill dialog box, for Use, choose Pattern, select a pattern from the pop-up palette, and click OK.

If Pattern is dimmed, you need to load a pattern library before you can select this option. (See "Managing libraries with the Preset Manager (Photoshop)" on page 43.)

- Select the Paint Bucket tool. In the options bar, choose Pattern from the Fill pop-up menu and select a pattern from the Pattern pop-up palette. Then click to fill the selected area with the pattern.

Note: *You can load additional pattern libraries into the pop-up palette prior to making a selection.* *(See "Creating and managing patterns" on page 178.)*

Stroking a selection or layer with color

You can use the Stroke command to paint a colored border around a selection, layer, or path. This allows you to create a softer border than one created using the Stroke layer style. The Stroke layer style provides a resolution-independent method to stroke a shape. (See "Managing Layers" on page 203.) You can use the Stroke layer effect when you want to stroke the entire layer. If you want a quick way to create a stroke on the current layer—without necessarily following the edge of the layer—use the Stroke command.

To stroke a selection or layer:

1 Specify a foreground color. (See "Choosing foreground and background colors" on page 179.)

2 Select the area or layer you want to stroke.

3 Choose Edit > Stroke.

4 In the Stroke dialog box, specify the width of the hard-edged border.

5 For Location, specify whether to place the border inside, outside, or centered over the selection or layer boundaries.

6 Specify an opacity and a blending mode. (See "Setting options for painting and editing tools" on page 171.)

7 If you're working in a layer and want to stroke only areas containing pixels, select the Preserve Transparency option. (See "Locking layers" on page 202.)

To stroke a path:

1 Select the path in the Paths palette.

2 Choose Stroke Path from the palette menu.

3 In the Stroke Path dialog box, choose a tool to stroke the path.

Creating and managing patterns

A pattern is an image that is repeated, or *tiled*, during application. Photoshop and ImageReady come with a variety of preset patterns. In Photoshop, you can create new patterns and save them in libraries for use with different tools and commands. In ImageReady, you can define a single pattern, called the User Defined Pattern, which you can use to fill selections and layers.

For information on defining and managing patterns, as well as information on using the pattern maker, see Photoshop Help.

Defining patterns

You use the Edit > Define Pattern command to create new patterns based on a selection.

To define a preset pattern:

1 Use the Rectangle Marquee tool ⬚ on any open image to select an area to use as a pattern. Feather must be set to 0 pixels. Note that large images may become unwieldy.

2 Choose Edit > Define Pattern.

3 (Photoshop) Enter a name for the pattern in the Pattern Name dialog box.

Note: *If you are using a pattern from one image and applying it to another, Photoshop converts the color mode.*

To use a preset pattern from the PostScript Patterns folder:

1 Choose File > Open. Each preset file in the PostScript Patterns folder (which comes with Photoshop) contains a single pattern in the Adobe Illustrator format. You can scale and render these patterns at any resolution.

2 Select the pattern file you want to use, and click Open.

3 Select any rasterizing options. (See "Opening and importing images" on page 90.)

4 Make a rectangular selection around the pattern, or make no selection to use the whole image.

5 Choose Edit > Define Pattern.

6 (Photoshop) Enter a name for the pattern in the Pattern Name dialog box.

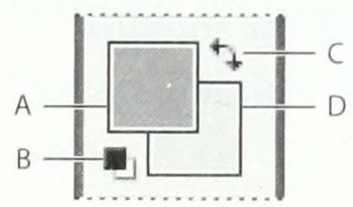
Choosing foreground and background colors

Photoshop uses the *foreground* color to paint, fill, and stroke selections and the *background* color to make gradient fills and fill in the erased areas of an image. The foreground and background colors are also used by some special effects filters.

You can designate a new foreground or background color using the Eyedropper tool, the Color palette, the Swatches palette, or the Adobe Color Picker.

For information on using the Adobe Color Picker, see Photoshop Help.

The default foreground color is black, and the default background color is white. (In an alpha channel, the default foreground is white, and the background is black.)



Foreground and background color boxes in toolbox
A. *Foreground color box* ***B.*** *Default colors icon*
C. *Switch colors icon* ***D.*** *Background color box*

Using color settings in the toolbox

The current foreground color appears in the upper color selection box in the toolbox; the current background color appears in the lower box.

The Info palette, the Color palette, and the Adobe Color Picker let you display color values using a number of color models.

For information on different color models, see Photoshop Help.

To change the foreground or background color:

1 Do one of the following:

- To change the foreground color, click the upper color selection box in the toolbox.
- To change the background color, click the lower color selection box in the toolbox.

2 Choose a color in the Adobe Color Picker.

For information on using the Adobe Color Picker, see Photoshop Help.

To reverse the foreground and background colors:

Click the Switch Colors icon in the toolbox.

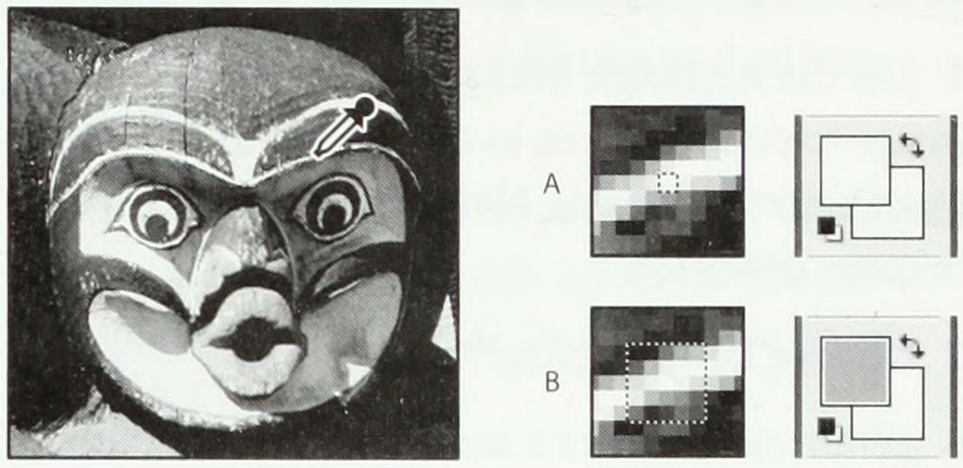
To restore the default foreground and background colors:

Click the Default Colors icon in the toolbox.

Using the Eyedropper tool

The Eyedropper tool samples color to designate a new foreground or background color. You can sample from the active image or from anywhere else on the screen.

You can also specify the area sampled by the Eyedropper tool. For example, you can set the eyedropper to sample the color values of a 3-by-3-pixel area under the pointer. Modifying the sample size of the eyedropper affects the color readouts displayed in the Info palette.



Selecting a foreground color with the Eyedropper tool
***A.** Point Sample **B.** 5 x 5 average sample*

To select the foreground or background color:

1 Select the Eyedropper tool .

2 To change the sample size of the eyedropper, choose an option from the Sample Size menu:

- Point Sample to read the precise value of the pixel you click.
- 3 by 3 Average or 5 by 5 Average to read the average value of the specified number of pixels within the area you click.

3 Do one of the following:

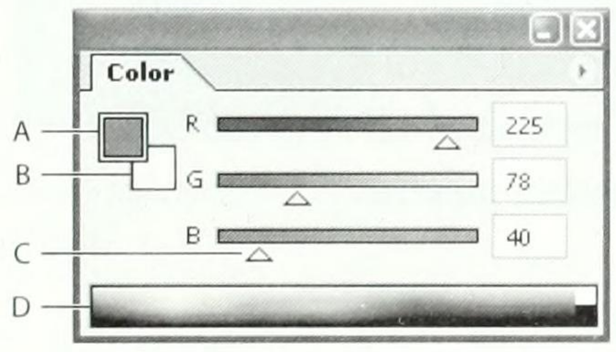
- To select a new foreground color, click in the image. Alternately, position the pointer over the image, press the mouse button, and drag anywhere on the screen. The foreground color selection box changes dynamically as you drag. Release the mouse button to pick the new color.

- To select a new background color, Alt-click (Windows) or Option-click (Mac OS) in the image. Alternately, position the pointer over the image, press Alt (Windows) or Options (Mac OS), press the mouse button, and drag anywhere on the screen. The background color selection box changes dynamically as you drag. Release the mouse button to pick the new color.

To use the Eyedropper tool temporarily while using any painting tool, hold down Alt (Windows) or Option (Mac OS).

Using the Color palette

The Color palette displays the color values for the current foreground and background colors. Using the sliders in the Color palette, you can edit the foreground and background colors according to several different color models. You can also choose a foreground or background color from the spectrum of colors displayed in the color ramp at the bottom of the palette.



Color palette
***A.** Foreground color **B.** Background color **C.** Slider*
***D.** Color bar*

The Color palette may display the following alerts when you select a color:

- In Photoshop, an exclamation point inside a triangle ⚠ appears above the left side of the color ramp when you choose a color that cannot be printed using CMYK inks.

For more information on identifying out-of-gamut colors, see Photoshop Help.

- A cube ◪ appears above the left side of the color ramp when you choose a color that is not Web-safe.

To learn more about Web-safe colors, see Photoshop Help.

To display the Color palette:

Choose Window > Color, or click the Color palette tab.

To change the color model of the color sliders:

Choose a Sliders option from the Color palette menu.

For information on different color models, see Photoshop Help.

To change the spectrum displayed in the color ramp:

1 Choose an option from the Color palette menu:

- RGB Spectrum, CMYK Spectrum (Photoshop), or Grayscale Ramp to display the spectrum of the specified color model.
- Current Colors to display the spectrum of colors between the current foreground color and the current background color.

2 To display only Web-safe colors, choose Make Ramp Web Safe.

To change the spectrum of the color ramp quickly, Shift-click in the color ramp until you see the spectrum you want.

To select the foreground or background color:

1 To edit the foreground or background color, make sure that its color selection box is active (outlined in black). To make the foreground or background color selection box active, click the box.

2 Do one of the following:

- Drag the color sliders. By default, the slider colors change as you drag. In Photoshop, you can turn off this feature to improve performance by deselecting Dynamic Color Sliders in the General section of the Preferences dialog box.
- Enter values next to the color sliders.
- Click the color selection box, choose a color using the color picker, and click OK.

For information on using the Adobe Color Picker, see Photoshop Help.

- Position the pointer over the color ramp (the pointer becomes the eyedropper), and click to sample a color. Alt-click to apply the sample to the nonactive color selection box.

Using the Swatches palette

You can choose a foreground or background color from the Swatches palette, or you can add or delete colors to create a custom swatch library. Creating libraries of swatches can help you group related or special swatches and manage palette size.

Note: *You can also use the Preset Manager to manage libraries. For more information,* *see "Managing libraries with the Preset Manager (Photoshop)" on page 43.*

To display the Swatches palette:

Choose Window > Swatches, or click the Swatches palette tab.

To change how swatches are displayed (Photoshop):

Choose a display option from the Swatches palette menu:

- Small Thumbnail to display a thumbnail of each swatch. This is the default view.
- Small List to display the name and thumbnail of each swatch.

To select a foreground or background color:

Do one of the following:

- To choose a foreground color, click a color in the Swatches palette.
- To choose a background color, Ctrl-click (Windows) or Command-click (Mac OS) a color in the Swatches palette.

To load a library of swatches:

Choose one of the following from the Swatches palette menu:

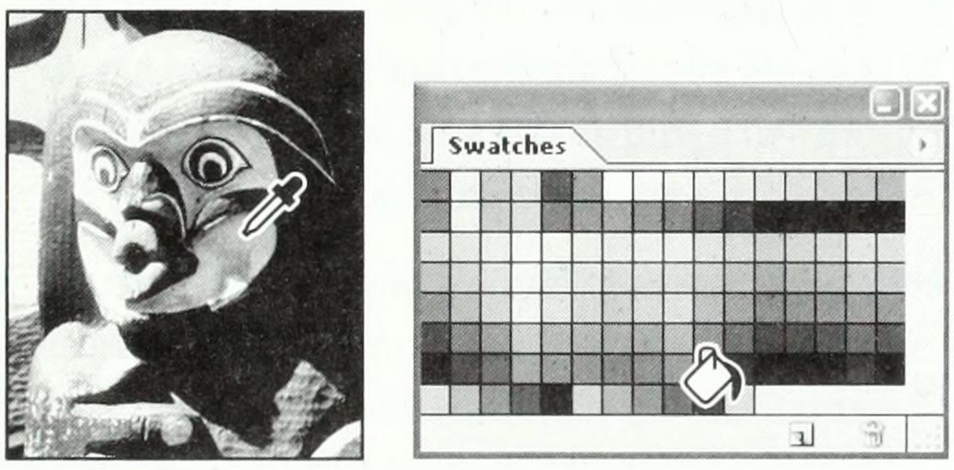
- Load Swatches to add a library to the current list. Select the library file you want to use, and click Load.
- Replace Swatches to replace the current list with a different library. Select the library file you want to use, and click Load.

- A library file (displayed at the bottom of the palette menu). Click OK to replace the current list, or click Append to append the current list.

To add a color to the Swatches palette:

Do one of the following:

- Make the color you want to add the foreground color, and click the New Swatch button in the Swatches palette. Alternately, choose New Swatch from the Swatches palette menu.
- (Photoshop) Make the color you want to add the foreground color. Position the pointer over an empty space in the bottom row of the Swatches palette (the pointer turns into the Paint Bucket tool), and click to add the color. Enter a name for the new color and click OK.



Color selected from image (left), and added to Swatches palette (right)

- (ImageReady) Drag the foreground color selection box or the background color selection box from the toolbox to the Swatches palette.
- (ImageReady) Drag a swatch from the Color Table palette to the Swatches palette.

Note: *New colors are saved in the Preferences file so that they persist between editing sessions. To permanently save a color, save it in a library.*

To duplicate a color in the Swatches palette (ImageReady):

Select the color you want to duplicate, and choose New Swatch from the Swatches palette menu.

To delete a color from the Swatches palette:

Do one of the following:

- Drag a swatch to the Trash button.
- (Photoshop) Hold down Alt (Windows) or Option (Mac OS), position the pointer over a swatch (the pointer turns into scissors), and click.
- (ImageReady) Select a swatch, and choose Delete Swatch from the Swatches palette menu.

To save a set of swatches as a library:

1 Choose Save Swatches from the Swatches palette menu.

2 Choose a location for the swatch library, enter a filename, and click Save.

You can save the library anywhere. However, if you place the library file in the Presets/Swatches folder inside the Photoshop program folder, the library name will appear at the bottom of the Swatches palette menu after you restart the application.

To return to the default library of swatches:

Choose Reset Swatches from the Swatches palette menu. You can either replace the current list or append the default library to the current list.

Chapter 9: Using Channels

Each image in Adobe Photoshop has channels that store information about the image's color. You can create additional channels to store spot colors for printing with special inks and to store masks for sophisticated selections.

About channels

Channels are grayscale images that store different types of information:

- *Color information channels* are created automatically when you open a new image. The image's color mode determines the number of color channels created. For example, an RGB image has four default channels: one for each of the red, green, and blue colors plus a composite channel used for editing the image.
- You can create *alpha channels* to store selections as grayscale images. You use alpha channels to create and store masks, which let you manipulate, isolate, and protect specific parts of an image. In addition to supporting alpha channels from Photoshop, you can save, load, and delete selections as alpha channels in ImageReady.
- You can create *spot color channels* to specify additional plates for printing with spot color inks.

For more information on spot colors, see Photoshop Help.

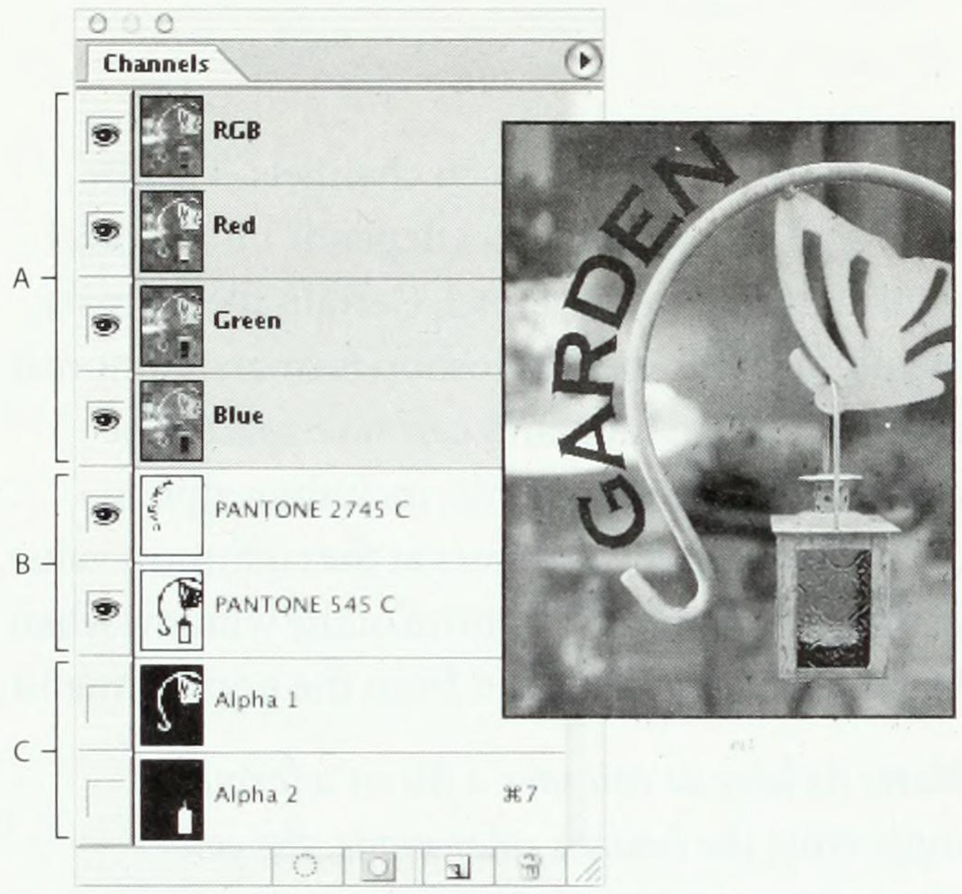
An image can have up to 56 channels. The file size required for a channel depends on the pixel information in the channel. Certain file formats, including TIFF and Photoshop formats, compress channel information and can save space. The uncompressed size of a file, including alpha channels and layers, appears as the rightmost value in the status bar at the bottom of the window when Document Sizes is chosen from the pop-up menu.

Note: *As long as you save a file in a format supporting the image's color mode, the color channels are preserved. Alpha channels are preserved only when you save a file in Adobe Photoshop, PDF, PICT, Pixar, TIFF, or Raw formats. DCS 2.0 format preserves only spot channels. Saving in other formats may cause channel information to be discarded.*

To learn more about file formats, see Photoshop Help.

Using the Channels palette (Photoshop)

The Channels palette lets you create and manage channels and monitor the effects of editing. The palette lists all channels in the image—composite channel first (for RGB, CMYK, and Lab images), then individual color channels, spot color channels, and finally alpha channels. A thumbnail of the channel's contents appears to the left of the channel name; the thumbnail automatically updates as you edit the channel.



Channels types
***A.** Color channels **B.** Spot channels **C.** Alpha channels*

Viewing channels

You can use the palette to view any combination of individual channels. For example, you can view an alpha channel and the composite channel together to see how changes made in the alpha channel relate to the entire image. By default, individual channels are displayed in grayscale.

To display the Channels palette:

1 Choose Windows > Channels, or click the Channels palette tab.

2 Use the scroll bars or resize the palette to see additional channels.

When a channel is visible in the image, an eye icon 👁 appears to its left in the palette.

To show or hide a channel:

Click in the eye column next to the channel to show or hide that channel. (Click the composite channel to view all default color channels. The composite channel is displayed whenever all the color channels are visible.)

To show or hide multiple channels, drag through the eye column in the Channels palette.

These guidelines apply to channels you display:

- In RGB, CMYK, or Lab images, you can view the individual channels in color. (In Lab images, only the *a* and *b* channels appear in color.)
- If more than one channel is active, the channels always appear in color.
- In alpha channels, selected pixels appear as white; unselected pixels appear as black (partially transparent or selected pixels appear as gray). These are the channel default options.
- If you display an alpha channel at the same time as color channels, the alpha channel appears as a transparent color overlay, analogous to a printer's rubylith or a sheet of acetate. To change the color of this overlay or set other alpha channel options, see "Creating alpha channels (Photoshop)" on page 133.

Changing the display of the palette

You can show the individual color channels in color (rather than grayscale) in the Channels palette and specify the size of the thumbnails. Using thumbnails is the most convenient way of tracking channel contents; however, turning off the display of thumbnails can improve performance.

To show color channels in color:

1 Do one of the following:

- In Windows, choose Edit > Preferences > Display & Cursors.
- In Mac OS, choose Photoshop > Preferences > Display & Cursors.

2 Select Color Channels in Color, and click OK.

To resize or hide channel thumbnails:

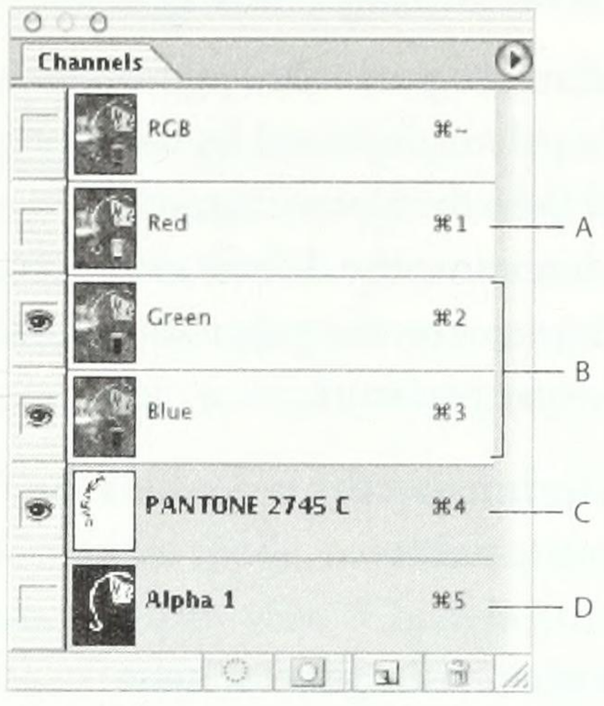
1 Choose Palette Options from the Channels palette menu.

2 Select a display option:

- Click a thumbnail size. Smaller thumbnails reduce the space required by the palette—helpful when you're working on smaller monitors.
- Click None to turn off the display of thumbnails.

Selecting and editing channels

You can select one or more channels in the Channels palette. The names of all selected, or *active*, channels are highlighted. Any editing changes you make apply to the active channels.



Selecting multiple channels
A. *Not visible or editable* ***B.*** *Visible but not selected for editing* ***C.*** *Selected for viewing and editing*
D. *Selected for editing but not viewing*

To select a channel:

Click the channel name. Shift-click to select (or deselect) multiple channels.

To edit a channel:

Use a painting or editing tool to paint in the image. Paint with white to add the selected channel's color at 100% intensity. Paint with a value of gray to add the channel's color at a lower intensity. Paint with black to fully remove the channel's color. (See "Modifying alpha channels (Photoshop)" on page 135.)

Managing channels (Photoshop)

You can rearrange channels, duplicate a channel within or between images, split a channel into separate images, merge channels from separate images into one new image, and delete alpha and spot channels when you're finished with them.

Rearranging and renaming channels

The default color channels normally appear at the top of the Channels palette, followed by the spot color channels, and then the alpha channels. You cannot move or rename the default channels, but you can rearrange and rename spot and alpha channels to suit the way you work.

Spot colors are overprinted in the order they appear in the Channels palette.

To change the order of alpha or spot channels:

Drag the channel up or down. When a line appears in the position you want, release the mouse button.

Note: *You can move alpha or spot channels above the default color channels only if the image is in Multichannel mode.*

To rename an alpha or spot channel:

Double-click the channel's name in the Channels palette, and enter a new name.

Duplicating channels

You might duplicate an image's channel to make a backup before editing the channel. Or you might duplicate alpha channels to a new image to create a library of selections to load into the current image one by one—thus keeping the file smaller.

If you are duplicating alpha channels between images, the channels must have identical pixel dimensions. (See "Creating new images" on page 78.)

Note: You cannot duplicate a channel to a Bitmap-mode image.

To duplicate a channel using the Duplicate command:

1 In the Channels palette, select the channel to duplicate.

2 Choose Duplicate Channel from the Channels palette menu.

3 Type a name for the duplicate channel.

4 For Document, do one of the following:

- Choose a destination. Only open images with pixel dimensions identical to the current image are available. To duplicate the channel in the same file, select the channel's current file.
- Choose New to copy the channel to a new image, creating a multichannel image containing a single channel. Type a name for the new image.

5 To reverse the selected and masked areas in the duplicate channel, select Invert.

To duplicate a channel within an image by dragging:

1 In the Channels palette, select the channel you want to duplicate.

2 Drag the channel onto the New Channel button at the bottom of the palette.

To duplicate a channel to another image by dragging or pasting:

1 In the Channels palette, select the channel you want to duplicate.

2 Make sure that the destination image is open.

Note: *The destination image does not have to be the same pixel dimensions as the duplicated channel.*

3 Do one of the following:

- Drag the channel from the Channels palette into the destination image window. The duplicated channel appears at the bottom of the Channels palette.
- Choose Select > All, and then choose Edit > Copy. Select the channel in the destination image and choose Edit > Paste. The pasted channel overwrites the existing channel.

Splitting channels into separate images

You can split the channels of a flattened image into separate images. The original file is closed, and the individual channels appear in separate grayscale image windows. The title bars in the new windows show the original filename plus the channel abbreviation (Windows) or full name (Mac OS). Any changes since the last save are retained in the new images and lost in the original.

Splitting channels is useful when you want to retain individual channel information in a file format that doesn't preserve channels.

Note: *Only flattened images can be split. (See "Flattening all layers" on page 206.)*

To split channels into separate images:

Choose Split Channels from the Channels palette menu.

Merging channels

Multiple grayscale images can be combined into a single image. Some grayscale scanners let you scan a color image through a red filter, a green filter, and a blue filter to generate red, green, and blue images. Merging lets you combine the separate scans into a single, color image.

The images you want to merge must be in Grayscale mode, have the same pixel dimensions, and be open. (See "Changing the pixel dimensions of an image" on page 57.) The number of grayscale images you have open determines the color modes available when merging channels. For example, you can't merge the split channels from an RGB image into a CMYK image, because CMYK requires four channels and RGB requires only three.

Note: *If you are working with DCS files that have accidentally lost their links (and so cannot be opened, placed, or printed), open the channel files, and merge them into a CMYK image. Then resave the file as a DCS EPS file.*

To merge channels:

1 Open the grayscale images containing the channels you want to merge, and make one of the images active.

You must have more than one image opened for the Merge Channels option to be available.

2 Choose Merge Channels from the Channels palette menu.

3 For Mode, choose the color mode you want to create. If an image mode is unavailable, it is dimmed. The number of channels appropriate for the mode appears in the Channels text box.

4 If necessary, enter a number in the Channels text box.

If you enter a number that is incompatible with the selected mode, Multichannel mode is automatically selected. This creates a a multichannel image with two or more channels.

5 Click OK.

6 For each channel, make sure the image you want is open. If you change your mind about image type, click Mode to return to the Merge Channels dialog box.

7 If merging into a multichannel image, click Next, and repeat step 6 to select the remaining channels.

Note: *All channels of a multichannel image are alpha channels or spot channels.*

8 When you are finished selecting channels, click OK.

The selected channels are merged into a new image of the specified type, and the original images are closed without any changes. The new image appears in an untitled window.

Note: *You cannot split and recombine (merge) an image with spot color channels. The spot color channel will be added as an alpha channel.*

Deleting channels

You may want to delete spot or alpha channels you no longer need before saving an image. Complex alpha channels can substantially increase the disk space required for an image.

To delete a channel (Photoshop):

1 Select the channel in the Channels palette.

2 Do one of the following:

- Alt-click (Windows) or Option-click (Mac OS) the Trash button.
- Drag the channel name in the palette to the Trash button.
- Choose Delete Channel from the Channels palette menu.
- Click the Trash button at the bottom of the palette, and then click Yes.

Note: *(Photoshop) When you delete a color channel from a file with layers, visible layers are flattened and hidden layers are discarded. This is done because removing a color channel converts the image to Multichannel mode, which does not support layers. An image isn't flattened when you delete an alpha channel, a spot channel, or a quick mask.*

To delete a channel (ImageReady):

Choose Select > Delete Channel, and choose the channel from the submenu.

Chapter 10: Using Layers

Layers allow you to organize your work into distinct levels. You can use layers to composite images and create artistic effects.

About layers

Layers allow you to work on one element of an image without disturbing the others. Think of layers as sheets of acetate stacked one on top of the other. Where there is no image on a layer, you can see through to the layers below. You can change the composition of an image by changing the order and attributes of layers. In addition, special features such as adjustment layers, fill layers, and layer styles let you create sophisticated effects.

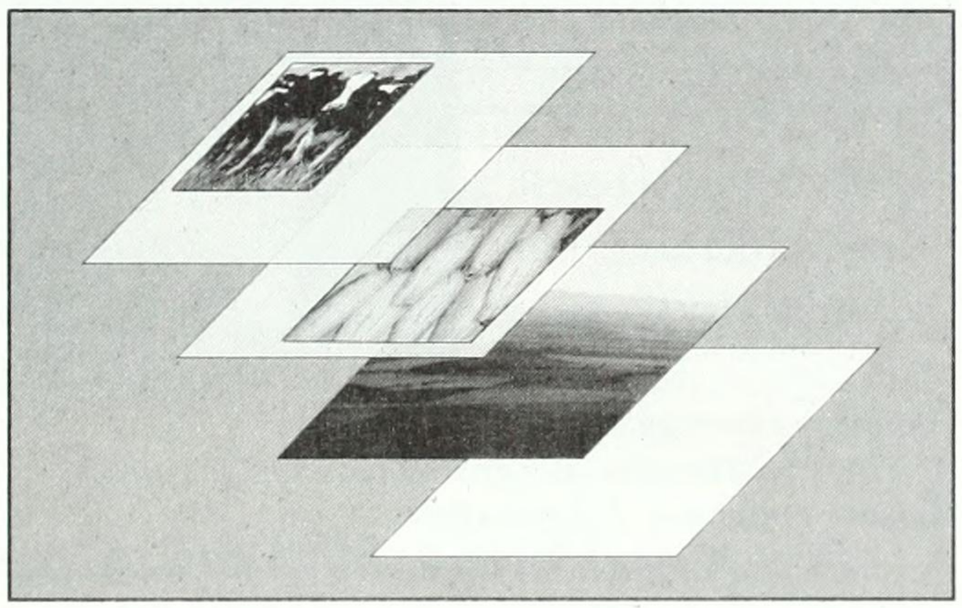


Illustration of how transparent areas on a layer let you see through to the layers below

You can put multiple layers together in different ways:

- Groups let you view and physically manipulate multiple layers as a single object. (See "Grouping layers (ImageReady)" on page 197.)
- Sets let you assign attributes to multiple layers as a single object. (See "Creating new layers and layer sets" on page 194.)
- Links let you link layers together to use them as a single object. (See "Linking layers" on page 200.) If you're using new files, use layer groups instead of linking layers (ImageReady).

Working with layers (ImageReady)

ImageReady layers have additional features that simplify Web design. For example, you can select multiple layers, either in the layers palette or directly in the document. Selected layers do not have to be contiguous. (See "Selecting layers" on page 196.) Once selected, layers can be aligned, distributed, moved, transformed, and grouped.

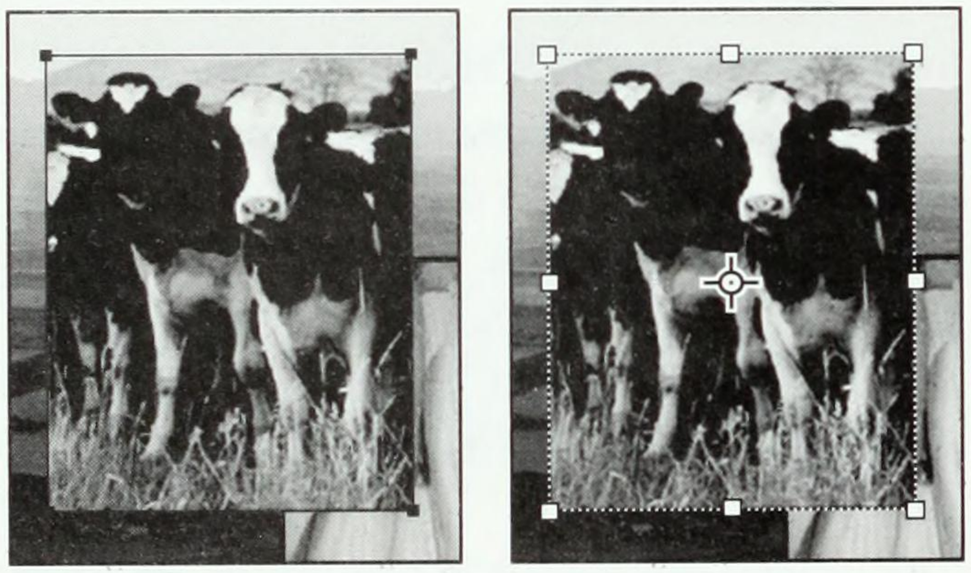
Using the Move tool with layers

In ImageReady, you can use the Move tool to select, align, distribute, and move multiple layers. Selecting the Move tool in the toolbox enables three additional move tools in the options bar:

- Layer Move tool to move the entire layer.
- Layer Select tool to move an ungrouped layer or a grouped layer as a single object.
- Direct Select tool to select a specific layer or layers in a group to move separately.

Manipulating layer content

In ImageReady, the content on a layer displays selection handles so that you can easily see in the document which layers are selected. You can set an option for layer content to invoke transform mode when selected—this way you can immediately resize or rotate a button after you draw.

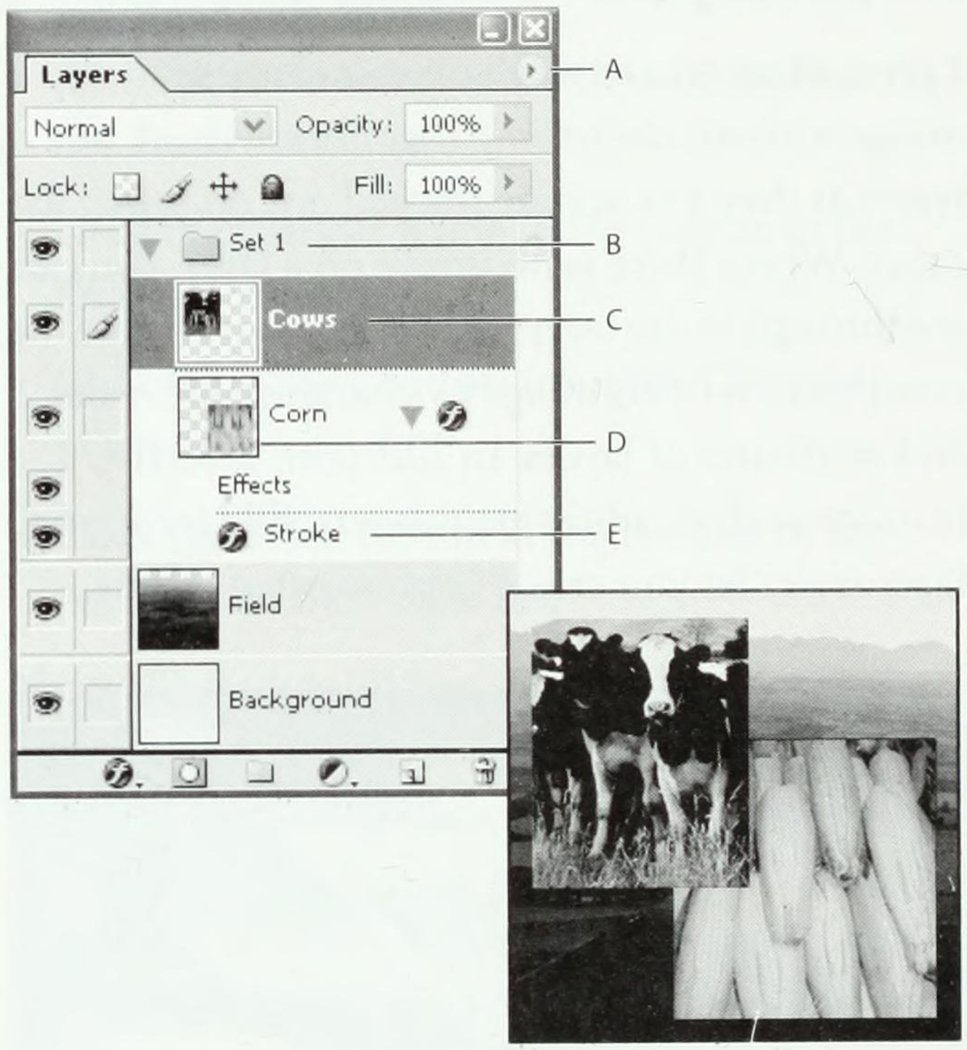


Layer content with selection handles (left) and with transform mode selected (right)

For more information on transforming layer content, see Photoshop Help.

Using the Layers palette

The Layers palette lists all layers, layer sets, and layer effects in an image. You can accomplish many tasks—such as creating, hiding, displaying, copying, and deleting layers—using the buttons in the Layers palette. You can access additional commands and options in the Layers palette menu and the Layers menu.



Photoshop Layers palette
***A.** Layers palette menu **B.** Layer set **C.** Layer*
***D.** Layer thumbnail **E.** Layer effect*

Displaying the Layers palette Choose Window > Layers. Be sure to move the palette from the dock to enable the palette menu.

Using the Layers palette menu Click the triangle in the upper right corner of the palette to access commands for working with layers.

Changing the size of layer thumbnails Choose Palette Options from the Layers palette menu, and select a thumbnail size.

Changing thumbnail contents (ImageReady) Choose Palette Options from the Layers palette menu, and select Entire Document to display the contents of the entire document. Select Layer Bounds to restrict the thumbnail to the object's pixels on the layer. This makes it easier to see in the Layers palette. Check the Show Layer Group Thumbnails box to show a composite image of the group rather than the group icon.

Turn off thumbnails to improve performance and save monitor space.

Expanding and collapsing layer sets Click the triangle to the left of a layer set folder. In Photoshop, press Alt (Windows) or Option (Mac OS) when clicking the triangle to expand or collapse all effects applied to layers contained within the set. Press Alt (Windows) or Option (Mac OS) when clicking the triangle to expand or collapse all sets, including nested layer sets. Press Ctrl (Windows) or Command (Mac OS) when clicking to see all sets at the same level as the selected one.

Creating layers and layer sets

A new image in Photoshop or ImageReady has a single layer. The number of additional layers, layer effects, and layer sets you can add to an image is limited only by your computer's memory.

Layer sets help you organize and manage layers. You can use layer sets to semantically arrange your layers to reduce clutter in the Layers palette. You can nest sets within other sets. You can also use layer sets to apply attributes and masks to multiple layers simultaneously.

In ImageReady, you may find that working with layer groups rather than layer sets is more efficient. See "Grouping layers (ImageReady)" on page 197.

About the background layer

When you create a new image with a white background or a colored background, the bottommost image in the Layers palette is *Background*. An image can have only one background. You cannot change the stacking order of a background, its blending mode, or its opacity. However, you can convert a background to a regular layer.

When you create a new image with transparent content, the image does not have a background layer. The bottommost layer is not constrained like the background layer; you can move it anywhere in the Layers palette, and change its opacity and blending mode.

To convert a background into a layer:

1 Double-click Background in the Layers palette, or choose Layer > New > Layer from Background.

2 Set layer options as desired. (See "Creating new layers and layer sets" on page 194.)

3 Click OK.

To convert a layer into a background:

1 Select a layer in the Layers palette.

2 Choose Layer > New > Background from Layer.

Note: *You cannot create a background by renaming a regular layer Background—you must use the Background from Layer command.*

Creating new layers and layer sets

You can create empty layers and add content to them, or you can create new layers from existing content. When you create a new layer, it appears either above the selected layer or within the selected layer set in the Layers palette.

To create a new layer or layer set using default options:

Click the New Layer button or New Layer Set button in the Layers palette.

To create a new layer or layer set and specify options:

1 Do one of the following:

- Choose Layer > New > Layer or choose Layer > New > Layer Set.
- Choose New Layer or New Layer Set from the Layers palette menu.
- Alt-click (Windows) or Option-click (Mac OS) the New Layer button or New Layer Set button in the Layers palette.
- Ctrl-click (Windows) or Command-click (Mac OS) the New Layer button or New Layer Set button in the Layers palette to add a layer below the currently selected layer.

2 Set layer options, and click OK:

- Name to specify a name for the layer or layer set. (See "Renaming layers" on page 203.)
- Use Layer Below to Create Clipping Mask. This option is not available for layer sets. (See "Creating clipping masks" on page 234.)
- Color to assign a color to the layer or layer set. (See "Color coding layers" on page 204.)
- Mode to specify a blending mode for the layer or layer set. (See "Choosing a blending mode" on page 208.)
- Opacity to specify an opacity level for the layer or layer set. (See "Setting layer opacity" on page 207.)
- (Photoshop) Fill with Mode-neutral color to fill the layer with a preset, neutral color. (See "Filling new layers with a neutral color" on page 208.)

To create a new layer that uses the style of an existing layer, see "Applying preset styles" on page 213.

To create a new layer with the same effects as an existing layer (ImageReady):

1 Select the existing layer in the Layers palette.

2 Drag the layer to the New Layer button at the bottom of the Layers palette. The newly created layer contains all the effects of the existing one.

To copy a layer set:

Drag an existing layer set to the New Layer button.

To convert a selection into a new layer:

1 Make a selection.

2 Do one of the following:

- Choose Layer > New > Layer Via Copy to copy the selection into a new layer.
- Choose Layer > New > Layer Via Cut to cut the selection and paste it into a new layer.

To create a new layer set from linked layers:

Choose Layer > New > Layer Set from Linked. (See "Linking layers" on page 200.)

To add new or existing layers to a layer set:

Do one of the following:

- Select the layer set in the Layers palette and click the New Layer button .
- Drag a layer to the layer set folder.
- Drag a layer set folder into another layer set folder. The layer set and all of its layers move.

To nest layer sets:

Drag an existing layer set to the New Layer Set button .

Working with layered images

There are many advantages to working with layered images. You can quickly select, hide, duplicate, lock, and change the appearance of images using layers.

Viewing layers and layer sets

Using the Layers palette, you can arrange your layers and layer sets in a way that makes the most sense to you. You can open sets when you want to work on the layers within them, and close sets to keep your palette manageable.

To view individual layers and layer sets:

Select Window > Layers palette to open the Layers palette. Each of your layers and layer sets will appear, unless they are in sets that are closed.

To view layers within a layer set:

1 Click the layer set in the Layers palette.

2 To open the set, do one of the following:

- Click the triangle to the left of the folder icon.
- Control-click (Windows) or Command-click (Mac OS) the triangle to the left of the folder icon and choose Open This Layer Set.

To view nested layer sets:

1 Open the parent layer set.

2 Do one of the following:

- Ctrl-click (Windows) or Command-click (Mac OS) the triangle to the left of the folder icon to open or close a set and its layers.
- Alt-click (Windows) or Option-click (Mac OS) the triangle to open or close a set and the sets nested within it.

- Ctrl + Alt-click (Windows) or Command + Option-click (Mac OS) to open or close all layers within the set, all sets nested within the set, and the set itself.

Selecting layers

If an image has multiple layers, you must select which layer you want to work on. Any changes you make to the image affect only the *active* layers. You select a layer to make it active. In Photoshop you can select only one layer. In ImageReady you can select multiple layers at a time. The name of the active layer appears in the title bar of the document window (Photoshop), and a paintbrush icon appears next to the layer in the Layers palette. You can select layers with the Layers palette or using the Move Tool.

If you don't see the desired results when using a tool or applying a command, you may not have the correct layer selected. Check the Layers palette to make sure that you're working on the desired layer.

To select a layer in the Layers palette:

Do one of the following:

- Click a layer in the Layers palette.
- (ImageReady) To select multiple contiguous layers, shift-click. To select multiple separate layers, Ctrl-click (Windows) or Command-click (Mac OS) in the layers palette.
- (ImageReady) To select linked layers, choose Select Linked Layers from the Layers palette menu.

To select layers directly in the document window:

1 Select the Move tool.

2 Do one of the following:

- (ImageReady) In the options bar, select the Layer Select tool. Click in the document on a single layer to select it, in a group to select the entire group, or in a layer in a layer set to select only that layer. Note that you can't select locked layers with this tool.
- (ImageReady) In the options bar, select the Direct Select tool. Click in the document on a layer within a group to select the individual layer.
- (Photoshop) In the options bar, select Auto Select Layer and click in the document on the layer content you want to select. The topmost layer containing pixels under the cursor will be selected. (See "Moving selections and layers within an image" on page 119.)
- Right-click (Windows) or Control-click (Mac OS) in the image, and choose a layer from the context menu. The context menu lists all the layers that contain pixels under the current pointer location.

To select a layer from a set:

1 Click the layer set in the Layers palette.

2 To open the set, do one of the following:

- Click the triangle to the left of the folder icon.

- Ctrl-click (Windows) or Command-click (Mac OS) the triangle to the left of the folder icon and choose Open This Layer Set from the popup menu. (You can choose Open Other Layer Sets to open those other than what you've selected.)

3 Click the individual layer in the set.

Displaying the contents of layers

You can use the Layers palette to selectively hide and display the contents of layers, layer sets, and layer effects. You can also specify how transparent areas are displayed in the image.

To change the visibility of a layer, layer set, or layer effect:

Do one of the following:

- In the Layers palette, click the eye icon next to a layer, layer set, or layer effect to hide its content in the document window. Click in the column again to redisplay the content.
- Alt-click (Windows) or Option-click (Mac OS) an eye icon to display only the content for that layer or layer set. Doing this will enable Photoshop to remember the visibility states of all layers before hiding them. Alt-click (Windows) or Option-click (Mac OS) in the eye column again to restore the original visibility settings.
- Drag through the eye column to change the visibility of multiple items in the Layers palette.

Note: *Only visible layers are printed.*

To change the way transparency is displayed:

1 Do one of the following:

- (Photoshop) In Windows, choose Edit > Preferences > Transparency & Gamut; in Mac OS, choose Photoshop > Preferences > Transparency & Gamut.
- (ImageReady) In Windows, choose Edit > Preference > Transparency; in Mac OS, choose ImageReady > Preferences > Transparency.

2 Choose a size and color for the transparency checkerboard, or choose None for Grid Size to hide the transparency checkerboard.

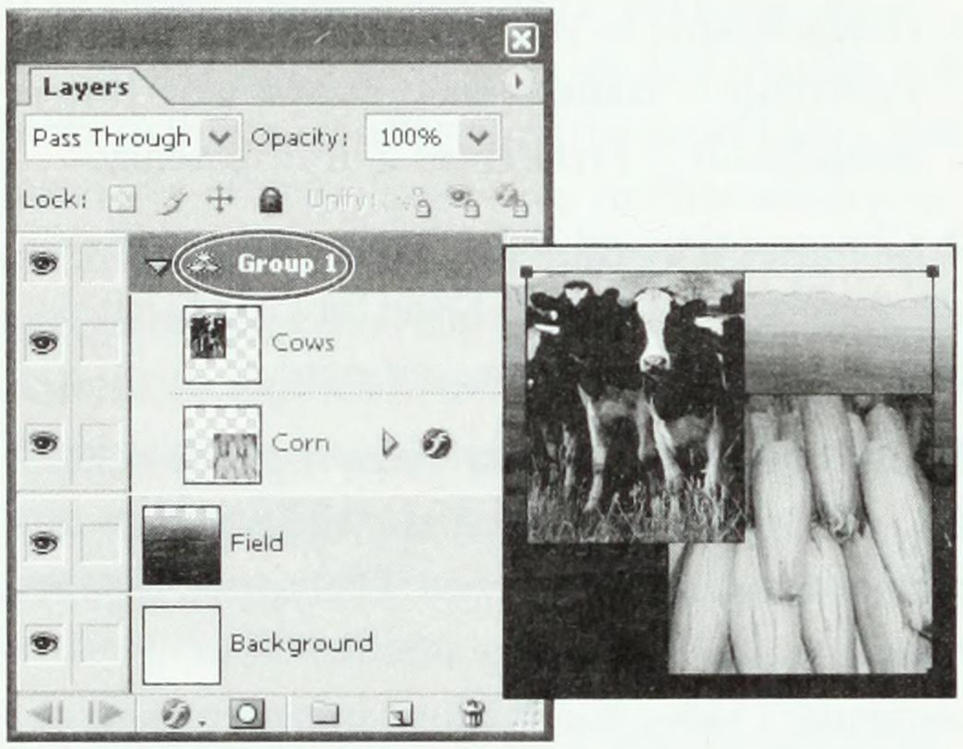
3 (Photoshop) Select Use Video Alpha to enable Photoshop to send transparency information to your computer's video board. This option requires hardware support—make sure that your computer's video board allows images to be overlaid on top of a live video signal.

4 Click OK.

Grouping layers (ImageReady)

Grouping layers in ImageReady simplifies working with and organizing multiple layers. Layer groups are similar to layer sets but allow for different kinds of quick manipulation. Layer groups let you move, drag, resize and physically manipulate multiple layers as one. This is very useful if you have, for example, a tab that consists of multiple layers. Rather than carefully selecting each layer associated with the tab every time you want to move it, you can group all the layers of your tab and move it as a single object.

When you create a layer group, the layers included in the group appear in the Layer palette indented under a heading of Group #, where "#" is the number of the group. With the Layer Select tool, you can click any layer in the group to move the entire group.



Layers in an ImageReady layer group can be selected and manipulated as a single object.

To group layers:

1 Select multiple layers in the layers palette.

2 Do one of the following:

- Choose Layer > Group Layers (or use Ctrl + G (Windows) or Command + G (Mac OS) to group.
- Alt-drag (Windows) or Option-drag (Mac OS) layers to the folder icon at the bottom of the layers palette to group the layers.

3 To Ungroup the layers, choose Layer > Ungroup Layers (or use Ctrl + Shift + G (Windows) or Command + Shift + G (Mac OS) to Ungroup.

Duplicating layers

Duplicating layers is an easy way to copy content within an image or between images. When duplicating layers between images, keep in mind that the layer's content will appear smaller or larger if it is copied to a file with different resolution. (See "Understanding image size and resolution" on page 50.)

To duplicate a layer or layer set within an image:

1 Select a layer or layer set in the Layers palette.

2 Do one of the following:

- Drag the layer or layer set to the New Layer button .
- Choose Duplicate Layer or Duplicate Layer Set from the Layers menu or the Layers palette menu. In Photoshop, enter a name for the layer or layer set, and click OK.
- (Photoshop) Press Alt (Windows) or Option (Mac OS), and drag the layer or layer set to the New Layer button or the New Layer Set button. Enter a name for the layer or layer set, and click OK.

To duplicate a layer or layer set between images:

1 Open the source and destination images.

2 In the Layers palette of the source image, select a layer or layer set.

3 Do one of the following:

- Drag the layer or layer set from the Layers palette into the destination image.

- Select the Move tool , and drag from the source image to the destination image. The duplicate layer or layer set appears above the active layer in the Layers palette of the destination image. Shift-drag to position the image content in the same location it occupied in the source image (if the source and destination images have the same pixel dimensions) or at the center of the document window (if the source and destination images have different pixel dimensions).
- (Photoshop) Choose Duplicate Layer or Duplicate Layer Set from the Layers menu or the Layers palette menu. Choose the destination document from the Document pop-up menu, and click OK.
- Choose Select > All to select all of the pixels on the layer, and choose Edit > Copy. Then choose Edit > Paste in the destination image.

To create a new document from a layer or layer set (Photoshop):

1 Select a layer or layer set in the Layers palette.

2 Choose Duplicate Layer or Duplicate Layer Set from the Layers menu or the Layers palette menu.

3 Choose New from the document pop-up menu, and click OK.

Changing the stacking order of layers

The stacking order in the Layers palette determines whether the content of a layer or layer set appears in front of or behind other elements in the image.

To change the order of layers and layer sets:

Do one of the following:

- Drag the layer or layer set up or down in the Layers palette. Release the mouse button when the highlighted line appears where you want to place the layer or layer set.
- To move a layer into a layer set, drag a layer to the layer set folder . The layer is placed at the bottom of the layer set.

Note: *If a layer set is expanded so that you can see all the layers within it, adding a layer beneath the expanded set automatically adds the layer to that set. To avoid this, collapse the layer set before adding the new layer.*

- Select a layer or layer set, choose Layer > Arrange, and choose a command from the submenu. If the selected item is in a layer set, the command applies to the stacking order within the layer set. If the selected item is not in a layer set, the command applies to the stacking order within the Layers palette.
- (ImageReady) To reverse the order of selected layers, choose Layer > Reverse Layers or choose Reverse Layers from the Layers palette menu. Note that these options appear dimmed if you do not have at least two layers selected.

Note: *By definition, the background layer is always at the bottom of the stacking order. Therefore, the Send to Back command places the selected item directly above the background layer. (See "About the background layer" on page 193.)*

Linking layers

By linking two or more layers or layer sets, you can move their contents together. You can also copy, paste, align, merge, apply transformations to, and create clipping masks from linked layers. In ImageReady, working with multiple layer selections is more flexible and provides all the functionality of linking (see "Selecting layers" on page 196), but linking is still an option in order to provide backwards compatibility.

To link layers:

1 Select a layer or layer set in the Layers palette.

2 Click in the column immediately to the left of any layers you want to link to the selected layer. A link icon appears in the column.

To link selected layers: (ImageReady)

Choose Link Layers from the Layers palette menu.

To unlink layers:

In the Layers palette, click the link icons to remove the links.

Aligning layers

You can align either layers or the contents of layers and layer sets using the Move tool. (See "Moving selections and layers within an image" on page 119.) In ImageReady, you can align layer groups.

To align the contents of layers:

1 Do one of the following:

- To align the content of a layer to a selection border, make a selection in the image. Then select a layer in the Layers palette.
- To align the contents of multiple layers to a selection border, make a selection in the image. Then link the layers you want to align in the Layers palette. (See "Linking layers" on page 200.)
- To align the contents of layers to the content of the active layer, link the layers you want to align to the active layer. (See "Linking layers" on page 200.)
- To align multiple layers (ImageReady), either select multiple layers with the Move tool or select a layer group.

2 Choose Layer > Align Linked or Layer > Align To Selection (Photoshop) or choose Edit > Align Layers (ImageReady), and choose a command from the submenu. These same commands are available as Alignment buttons in the Move tool options bar:

- Top Edges aligns the top pixel on the linked layers to the top pixel on the active layer or the top edge of the selection border.
- Vertical Centers aligns the vertical center pixel on the linked layers to the vertical center pixel on the active layer or the vertical center of the selection border.
- Bottom Edges aligns the bottom pixel on the linked layers to the bottom pixel on the active layer or the bottom edge of the selection border.

- Left Edges aligns the left pixel on the linked layers to the left pixel on the active layer or the left edge of the selection border.
- Horizontal Centers aligns the horizontal center pixel on the linked layers to the horizontal center pixel on the active layer or the horizontal center of the selection border.
- Right Edges aligns the right pixel on the linked layers to the right pixel on the active layer or the right edge of the selection border.

Distributing layers

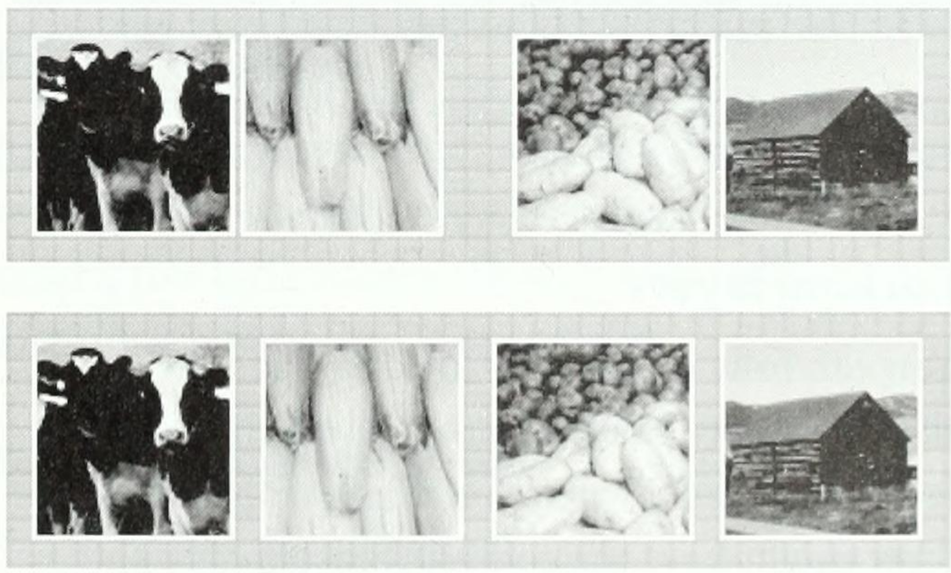
You can distribute your layers in your document in a number of different ways. Both Photoshop and ImageReady have tools that let you distribute the layers in commonly used formations, and you can can customize the distribution as well. For instance, you might have layers that you want to align by centers but that might cause some overlap. So you can distribute the space between the layers evenly to remedy the problem.

To evenly distribute layers and layer groups:

1 Link three or more layers (Photoshop) or select multiple layers or a layer group with the Move tool (ImageReady).

2 Choose Layers > Distribute Linked (Photoshop) or Edit > Distribute Linked Layers (ImageReady) from the main menu, or in the options bar, click a Distribution button. Each of these buttons works on linked layers in Photoshop, or multiple selected layers or layer groups in ImageReady:

- Top edges spaces the layers evenly starting from the top pixel on each layer.
- Vertical Centers spaces the layers evenly starting from the vertical center pixel of each layer.
- Bottom Edges spaces the layers evenly starting from the bottom pixel of each layer.
- Left Edges spaces the layers evenly starting from the left pixel of each layer.
- Horizontal Centers spaces the layers evenly starting from the horizontal center of each layer.
- Right Edges spaces the layers evenly starting from the right pixel on each layer.



Layers spaced unevenly (top) and spaced evenly (bottom)

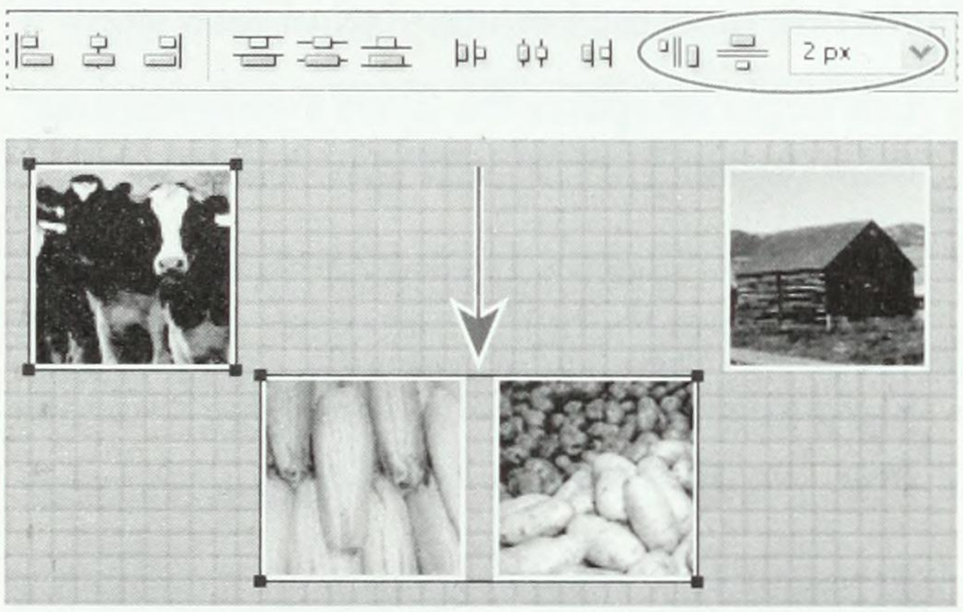
To distribute layers unevenly (ImageReady):

1 Select the Move tool.

2 Select the layers you wish to space.

3 Enter a number in the Distribute Spacing box to the right of the Distribution buttons in the options bar. This number equals the number of pixels that will separate the layers. You can choose different numbers for different combinations of layers or layer groups to create an uneven spacing pattern.

4 Choose one of the Distribute Vertically or Distribute Horizontally buttons to finish the distribution process.



Space Between Distributed Layers Box lets you input size of layer separation.

Locking layers

You can fully or partially lock layers to protect their contents. For instance, you might want to lock a layer fully when you finish with it. Another layer might have the correct transparency and styles, but you are still deciding on positioning, so you want to leave that layer partially locked. When a layer is locked, a lock icon displays to the right of the layer name. The lock icon is solid when the layer is fully locked; it is hollow when the layer is partially locked.

To lock all properties of a layer or layer set:

1 Select a layer or layer set.

2 Do one of the following:

- Click the Lock All option in the Layers palette.
- (ImageReady) Choose Layer Options from the Layers palette menu, and select the Lock All option.

***Note:** When a layer in a locked layer set has individual lock options applied to it, the lock icon is dimmed .*

To partially lock a layer:

1 Select a layer.

2 Click one or more lock options in the Layers palette. (In ImageReady, you can also choose Layer Options from the Layers palette menu.) Select one or more lock options:

- Lock Transparency to confine editing to the opaque portions of the layer. This option is equivalent to the Preserve Transparency option in earlier versions of Photoshop.
- Lock Image to prevent modification of the layer's pixels using the painting tools.
- Lock Position to prevent the layer's pixels from being moved.

Note: *For type layers, Lock Transparency and Lock Image are selected by default and cannot be deselected.*

To apply lock options to all linked layers or all layers in a layer set:

1 Select a linked layer or a layer set.

2 Choose Lock All Linked Layers or Lock All Layers in Set from the Layers menu or the Layers palette menu.

3 Select lock options, and click OK.

Unifying layers (ImageReady)

The unify buttons in the Layers palette determine how the changes you make to a layer in the active rollover state or animation frame apply to the other states in a rollover or frames in an animation. When a unify button is selected, changes apply to all states and frames; when a button is deselected, changes apply to only the active state or frame. (See "Unifying and matching layer rollovers and animations" on page 270.)

Sampling from layers

The default behavior of the Magic Wand, Smudge, Blur, Sharpen, Paint Bucket, Clone Stamp, and Healing Brush tools is to sample color only from pixels on the active layer. This means you can smudge or sample in a single layer even when other layers are visible, and you can sample from one layer and paint in another one.

Alternately, you can choose to paint using sampled data from all visible layers. For example, you can use the Clone Stamp tool to clone an area containing pixels from all the visible layers.

To sample from all visible layers:

1 Select the Magic Wand tool, the Smudge tool, the Blur tool, the Sharpen tool, the Paint Bucket tool, the Clone Stamp tool, or the Healing Brush tool.

2 In the options bar, select Use All Layers.

Note: *When you are using tools that sample image data, painting or editing in a new layer where there are no pixels produces the best results when Use All Layers is selected.*

Managing Layers

After you add layers to an image, you can use the Layers palette to manage them, and in ImageReady you can use the File menu to export them.

Renaming layers

As you add layers to an image, it's helpful to rename layers based on their content. Using descriptive layer names allows you to easily identify layers in the Layers palette.

To rename a layer or layer set:

1 Do one of the following:

- Double-click the layer or layer set's name in the Layers palette, and enter a new name.

- Press Alt (Windows) or Option (Mac OS), and double-click the layer set's name in the Layers palette. Enter a new name in the Name text box, and click OK.
- (Photoshop) Select a layer or layer set, and choose Layer Properties or Layer Set Properties from the Layers menu or the Layers palette menu. Enter a new name in the Name text box, and click OK.
- (ImageReady) Select a layer or layer set, and choose Layer Options or Layer Set Options from the Layers menu or the Layers palette menu. Enter a new name in the Name text box, and click OK.

Color coding layers

Color coding layers and layer sets makes it easier to locate related layers in the Layers palette.

To assign a color to a layer or layer set:

1 Do one of the following:

- (Photoshop) Select a layer or layer set, and choose Layer Properties or Layer Set Properties from the Layers menu or the Layers palette menu.
- (ImageReady) Select a layer or layer set, and choose Layer Options or Layer Set Options from the Layers menu or the Layers palette menu.
- For layer sets, press Alt (Windows) or Option (Mac OS), and double-click the layer set's name in the Layers palette.

2 Choose a color from the Color pop-up menu, and click OK.

Rasterizing layers

You cannot use the painting tools or filters on layers that contain vector data (such as type layers, shape layers, and vector masks) and generated data (such as fill layers). However, you can rasterize these layers to convert their contents into a flat, raster image.

To rasterize a single layer:

1 Select the layer you want to rasterize.

2 Choose Layer > Rasterize, and choose an option from the submenu.

To rasterize multiple layers:

Do one of the following:

- Link the layers you want to rasterize, and choose Layer > Rasterize > Linked Layers. (See "Linking layers" on page 200.)
- To rasterize all layers that contain vector and generated data, choose Layer > Rasterize > All Layers.

Deleting layers

Deleting layers that you no longer need reduces the size of your image file.

To delete a layer or layer set:

1 Select a layer or layer set in the Layers palette. In ImageReady you can select multiple layers.

2 Do one of the following:

- To delete the layer or layer set with confirmation, click the Trash button. Alternately, choose Delete Layer or Delete Layer Set from the Layers menu or the Layers palette menu.
- To delete the layer or layer set without confirmation, drag it to the Trash button or Alt-click (Windows) or Option-click (Mac OS) the Trash button.

To delete linked layers (Photoshop):

Do one of the following:

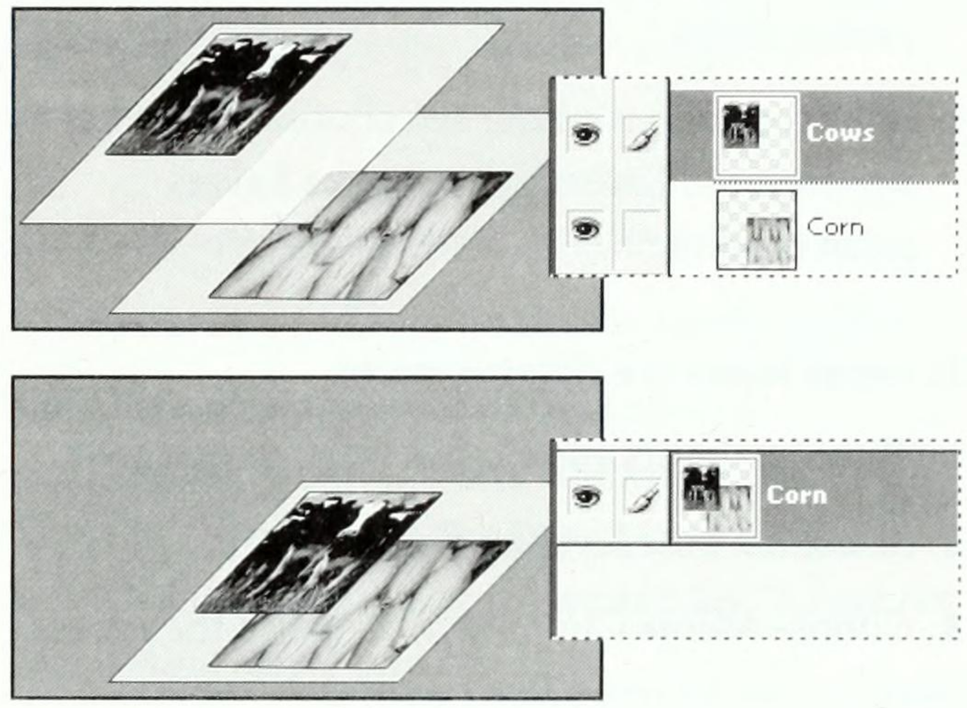
- To delete the linked layers with confirmation, choose Delete Linked Layers from the Layers menu or the Layers palette menu. Alternately, Ctrl-click (Windows) or Command-click (Mac OS) the Trash button.
- To delete the linked layers without confirmation, Ctrl-Alt-click (Windows) or Command-Option-click (Mac OS) the Trash button.

To delete hidden layers (Photoshop):

Choose Delete Hidden Layers from the Layers menu or the Layers palette menu.

Merging and stamping layers

When you have finalized the content of layers, you can merge them to create partial versions of your composite image. This helps you manage the size of your image files. When you merge layers, the data on the top layers replaces the data it overlaps on the lower layers. The intersection of all transparent areas in the merged layers remains transparent.



Before and after merging two layers

Note: *You cannot use an adjustment layer or fill layer as the target layer for a merge. (See "Merging adjustment layers or fill layers" on page 226.)*

In addition to merging layers, you can stamp layers. Stamping allows you to merge the contents of more than one layer into a target layer while leaving the other layers intact. Typically, the selected layer will stamp down to the layer below it.

Note: *When you save a merged document, you cannot revert back to the unmerged state; the layers are permanently merged.*

To merge two layers or layer sets:

1 Position the layers or layer sets you want to merge next to each other in the Layers palette, and make sure that the visibility for both items is enabled.

2 Select the top item in the pair.

3 Do one of the following:

- If the top item is a layer, choose Merge Down from the Layers menu or the Layers palette menu.
- If the top item is a layer set, choose Merge Layer Set from the Layers menu or the Layers palette menu.

To merge layers in a clipping mask:

1 Hide any layers you do not want to merge.

2 Select the base layer in the group.

3 Choose Merge Clipping Mask from the Layers menu or the Layers palette menu.

To merge all visible linked layers:

Choose Merge Linked from the Layers palette or the Layers palette menu.

To merge all the visible layers and layer sets in an image:

Choose Merge Visible from the Layers palette or the Layers palette menu.

To stamp layers:

1 Position the layer you want to stamp to above the layer you want to stamp from, and make sure that the visibility for both items is enabled.

2 Select the top item in the pair.

3 Press Ctrl+Alt+E (Windows) or Command+Option+E (Mac OS).

The selected layer is stamped with the contents of the other layer.

To stamp linked layers:

Select one of the linked layers, and press Ctrl+Alt+E (Windows) or Command+Option+E (Mac OS). The selected layer is stamped with the contents from the other linked layers.

To stamp all visible layers:

Select the layer or layer set that you want to contain the new contents, and press Shift+Ctrl+Alt+E (Windows) or Shift+Command+Option+E (Mac OS).

alternately, you can hold down Alt (Windows) or Option (Mac OS), and choose Layer > Merge Visible. The modified Merge command merges all the visible data into the current target layer.

Flattening all layers

In a flattened image, all visible layers are merged into the background, which greatly reduces the file size. Flattening an image discards all hidden layers and fills the remaining transparent areas with white. In most cases, you won't want to flatten a file until you have finished editing the individual layers.

Note: *Converting an image between some color modes flattens the file. Be sure to save a copy of your file that includes all layers if you want to edit the original image after the conversion.*

To flatten an image:

1 Make sure that all the layers you want to keep are visible.

2 Choose Layer > Flatten Image, or choose Flatten Image from the Layers palette menu.

Tracking file size

File size depends on the pixel dimensions of an image and the number of layers contained in the image. Images with more pixels may produce more detail when printed, but they require more disk space to store and may be slower to edit and print. You should keep track of your file sizes to make sure the files are not becoming too large for your purposes. If the file is becoming too large, reduce the number of layers in the image or change the image size.

You can view file size information for an image at the bottom of the application window (Windows) or document window (Mac OS). For more information, see "Displaying file and image information" on page 37.

Exporting layers (ImageReady)

In ImageReady, you can export some or all layers of a document as files. You can export layers as Photoshop (PSD), GIF, JPEG, PNG 8, PNG 24, WBMP or SWF. See "Exporting layers as files (ImageReady)" on page 303.

Setting opacity and blending options

A layer's opacity and blending options determine how its pixels interact with pixels on other layers.

Setting layer opacity

A layer's opacity determines to what degree it obscures or reveals the layer beneath it. A layer with 1% opacity appears nearly transparent, while one with 100% opacity appears completely opaque.

To specify opacity for a layer or layer set:

1 Select a layer or layer set in the Layers palette.

Note: *You cannot change the opacity of a background layer or a locked layer. You can, however, convert a background layer to a regular layer that does support transparency. See "About the background layer" on page 193.*

2 Do one of the following:

- In the Layers palette, enter a value in the Opacity text box or drag the Opacity pop-up slider.
- Choose Layer > Layer Style > Blending Options. Enter a value in the Opacity text box or drag the Opacity pop-up slider.
- Select the Move tool and type a number on your keyboard for the percentage of opacity for the selected layer.

Note: *To view blending options for a text layer, choose Layer > Layer Style > Blending Options, or choose Blending Options from the Add a Layer Style button at the bottom of the Layers palette menu.*

Choosing a blending mode

A layer's blending mode determines how its pixels blend with underlying pixels in the image. You can create a variety of special effects using blending modes.

By default, the blending mode of a layer set is Pass Through, which means that the layer set has no blending properties of its own. When you choose a different blending mode for a layer set, you effectively change the order in which the entire image is composited. All of the layers in the layer set are composited first. The composited layer set is then treated as a single image and blended with the rest of the image using the selected blending mode. Thus, if you choose a blending mode other than Pass Through for the layer set, none of the adjustment layers or layer blending modes inside the layer set will apply to layers outside the set.

For more information on blending modes, see Photoshop Help.

Note: *There is no Clear blending mode for layers. In addition, the Color Dodge, Color Burn, Darken, Lighten, Difference, and Exclusion modes are unavailable for Lab images.*

To specify a blending mode for a layer or layer set:

1. Select a layer or layer set in the Layers palette.
2. Choose a blending mode:

- In the Layers palette, choose an option from the Blend Mode pop-up menu.
- Choose Layer > Layer Style > Blending Options, and then choose an option from the Blend Mode pop-up menu.

Filling new layers with a neutral color

Some filters (such as the Lighting Effects filter) cannot be applied to layers with no pixels. Selecting Fill with Mode-neutral color in the New Layer dialog box resolves this problem by first filling the layer with a preset, neutral color. The neutral color is assigned based on the layer's blending mode and is invisible. If no effect is applied, filling with a neutral color has no effect on the remaining layers. The Fill with Neutral Color option is not available for layers that use the Normal, Dissolve, Hue, Saturation, Color, or Luminosity modes.

Specifying fill opacity

In addition to setting opacity for a layer, which affects any layer styles and blending modes applied to the layer, you can specify a fill opacity for layers. Fill opacity affects pixels painted in a layer or shapes drawn on a layer without affecting the opacity of any layer effects that have been applied to the layer.

To specify fill opacity for a layer:

Do one of the following:

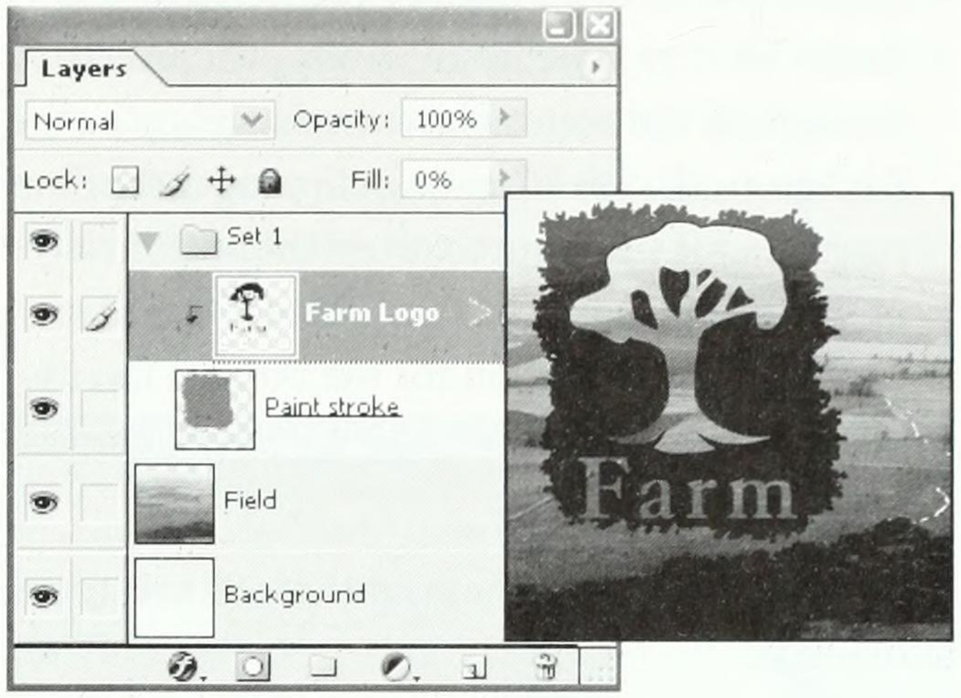
- (Photoshop) In the Layers palette, enter a value in the Fill Opacity text box or drag the Fill Opacity pop-up slider.
- (Photoshop) Double-click a layer thumbnail, choose Layer > Layer Style > Blending Options, or choose Add a Layer Style > Blending Options from the Layers palette menu. Enter a value in the Fill Opacity text box.

Note: *To view blending options for a text layer, choose Layer > Layer Style > Blending Options, or choose Blending Options from the Add a Layer Style button at the bottom of the Layers palette menu. (ImageReady) Choose Layer > Layer Style > Blending Options and enter a value in the Fill Opacity text box.*

Specifying knockout options

Knockout options let you specify which layers "punch through" to reveal content from other layers. For example, you can use a text layer to knock out a color adjustment layer and reveal a portion of the image using the original colors.

To create a knockout effect, you need to decide which layer will create the shape of the knockout, which layers will be punched through, and which layer will be revealed. If you want to reveal a layer other than the Background, you can place the layers you want to use in a layer set or clipping mask.



Farm logo with shallow knockout to Field layer

To create a knockout:

1 Do one of the following in the Layers palette:

- Position the layer that will create the knockout above the layers that will be punched through, and make the layer you want to reveal the Background. (Choose Layer > New > Background from Layer to convert a regular layer to the Background.)
- Place the layers you want to use in a layer set. The top layer in the set will punch through to the bottom layer in the set or the Background. If you want to reveal the Background, make sure the blending mode of the layer set is set to Pass Through (the default).

- Place the layers you want to use in a clipping mask. The top layer in the group will punch through to the bottom layer in the group or the Background. (See "Creating clipping masks" on page 234.) If you want to reveal the bottom layer in the group, make sure the Blend Clipped Layers as Group option for the bottom layer is selected. (See "Grouping blend effects" on page 211.)

2 Select the top layer (the layer that will create the knockout).

3 Double-click a layer thumbnail (Photoshop), choose Layer > Layer Style > Blending Options, or choose Blending Options from the Layers palette menu.

Note: *To view blending options for a text layer, choose Layer > Layer Style > Blending Options, or choose Blending Options from the Add a Layer Style button at the bottom of the Layers palette menu.*

4 Choose an option from the Knockout pop-up menu:

- Shallow to knock out to the first possible stopping point such as the bottom of the layer set or clipping mask containing the knockout option.
- Deep to knock out to the Background. If there is no Background, Deep knocks out to transparency.

5 Lower the fill opacity or change the blending mode to create the knockout effect. (See "Specifying fill opacity" on page 208 and "Choosing a blending mode" on page 208.)

6 Click OK.

Restricting blending to channels (Photoshop)

You can restrict blending effects to a specified channel when blending a layer or layer set. By default, all channels are included when blending a layer or layer set. The channel selections vary based on the type of image you are editing. For example, if you are editing a RGB image, the channel choices are R, G, and B. If you are editing a CMYK image, the channel choices are C, M, Y, and K. When using an RGB image, for example, you can choose to exclude the Red channel from blending; in the composite image, only information contained in the Green and Blue channels are affected.

For more information about color channels, see Photoshop Help.

To exclude channels from blending:

1 Double-click a layer thumbnail, and do one of the following:

- Choose Layer > Layer Style > Blending Options,
- Choose Blending Options from the Add a Layer Style button at the bottom of the Layers palette.

Note: *To view blending options for a text layer, choose Layer > Layer Style > Blending Options, or choose Blending Options from the Add a Layer Style button at the bottom of the Layers palette menu.*

2 In the Advanced Blending area of the Layer Style dialog box, deselect any channels you do not want to include when the layer is blended.

Grouping blend effects

By default, layers in a clipping mask are blended with the underlying layers using the blending mode of the bottommost layer in the group. However, you can choose to have the blending mode of the bottommost layer apply only to that layer, allowing you to maintain the original blending appearance of the clipped layers. (See "Creating clipping masks" on page 234.)

You can also apply the blending mode of a layer to layer effects that modify opaque pixels, such as Inner Glow or Color Overlay, without changing layer effects that modify only transparent pixels, such as Outer Glow or Drop Shadow.

To specify the scope of blending options:

1 Select the layer that you want to affect.

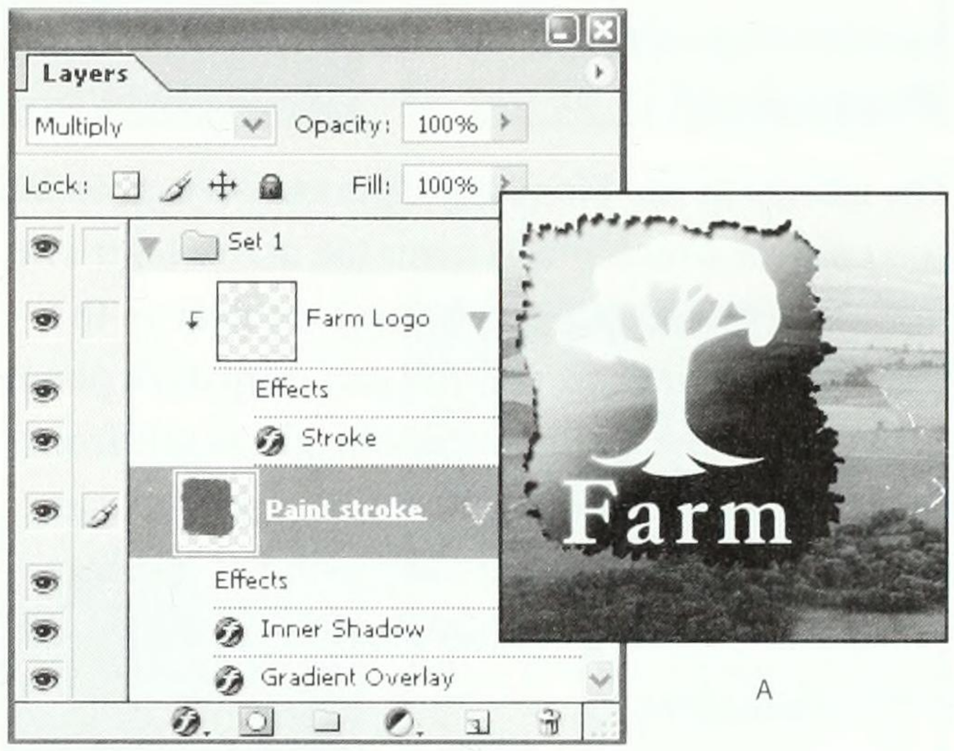
2 Do one of the following:

- Double-click a layer thumbnail, choose Blending Options from the Layers palette menu (Photoshop), or choose Layer > Layer Style > Blending Options.

Note: *To view blending options for a text layer, choose Layer > Layer Style > Blending Options, or choose Blending Options from the Add a Layer Style button at the bottom of the Layers palette menu.*

3 Specify the scope of blending options:

- Select Blend Interior Effects as Group to apply the blending mode of the layer to layer effects that modify opaque pixels, such as Inner Glow, Satin, Color Overlay, and Gradient Overlay.
- Select Blend Clipped Layers as Group to apply the blending mode of the base layer to all layers in the clipping mask. Deselecting this option, which is always selected by default, maintains the original blending mode and appearance of each layer in the group.



Advanced blending options
A. *Farm Logo and Paint Stroke layers each with its own blending mode* ***B.*** *Blend Interior Effects as Group option selected* ***C.*** *Blend Clipped Layers as Group option selected*

- Select Transparency Shapes Layers to restrict layer effects and knockouts to opaque areas of the layer. Deselecting this option, which is always selected by default, applies these effects throughout the layer.

- Select Layer Mask Hides Effects to restrict layer effects to the area defined by the layer mask.
- Select Vector Mask Hides Effects to restrict layer effects to the area defined by the vector mask.

4 Click OK.

Specifying a range for blending layers (Photoshop)

The sliders in the Blending Options dialog box let you control which pixels from the active layer and from the underlying visible layers appear in the final image. For example, you can drop dark pixels out of the active layer or force bright pixels from the underlying layers to show through. You can also define a range of partially blended pixels to produce a smooth transition between blended and unblended areas.

To define a range for the blending operation:

1 Double-click a layer thumbnail, choose Layer > Layer Style > Blending Options, or choose Add a Layer Style > Blending Options from the Layers palette menu.

Note: *To view blending options for a text layer, choose Layer > Layer Style > Blending Options, or choose Blending Options from the Add a Layer Style button at the bottom of the Layers palette menu.*

2 In the Advanced Blending area of the Layer Style dialog box, choose an option from the Blend If pop-up menu.

- Gray to specify a blending range for all channels.
- An individual color channel (for example, red, green, or blue in an RGB image) to specify blending in that channel.

3 Use the This Layer and Underlying Layer sliders to set the brightness range of the blended pixels—measured on a scale from 0 (black) to 255 (white). Drag the white slider to set the high value of the range. Drag the black slider to set the low value of the range.

To define a range of partially blended pixels, hold down Alt (Windows) or Option (Mac OS), and drag one half of a slider triangle. The two values that appear above the divided slider indicate the partial blending range.

Keep the following guidelines in mind when specifying blending ranges:

- Use the This Layer sliders to specify the range of pixels on the active layer that will blend, and therefore appear, in the final image. For example, if you drag the white slider to 235, pixels with brightness values higher than 235 will remain unblended and will be excluded from the final image.
- Use the Underlying Layer sliders to specify the range of pixels in the underlying visible layers that will blend in the final image. Blended pixels are combined with pixels in the active layer to produce composite pixels, while unblended pixels show through overlying areas of the active layer. For example, if you drag the black slider to 19, pixels with brightness values lower than 19 will remain unblended and will show through the active layer in the final image.

Using layer effects and styles

Layer styles let you quickly apply effects to a layer's content. You can scan through a variety of predefined layer styles and apply a style with just a click of the mouse, or you can create a custom style by applying multiple effects to a layer.

About layer effects and styles

Photoshop and ImageReady provide a variety of effects—such as shadows, glows, bevels, overlays, and strokes—that let you quickly change the appearance of a layer's contents. Layer effects are linked to the layer contents. When you move or edit the contents of the layer, the effects are modified correspondingly. For example, if you apply a drop shadow effect to a text layer, the shadow will change automatically when you edit the text.

The effects that you apply to a layer become part of the layer's custom *style*. When a layer has a style, an "f" icon appears to the right of the layer's name in the Layers palette. You can expand the style in the Layers palette to view all the effects that compose the style and edit the effects to change the style.

When you save a custom style, it becomes a preset style. Preset styles appear in the Styles palette and can be applied with just a click of the mouse. Photoshop and ImageReady provide a variety of preset styles to fill a wide range of uses.

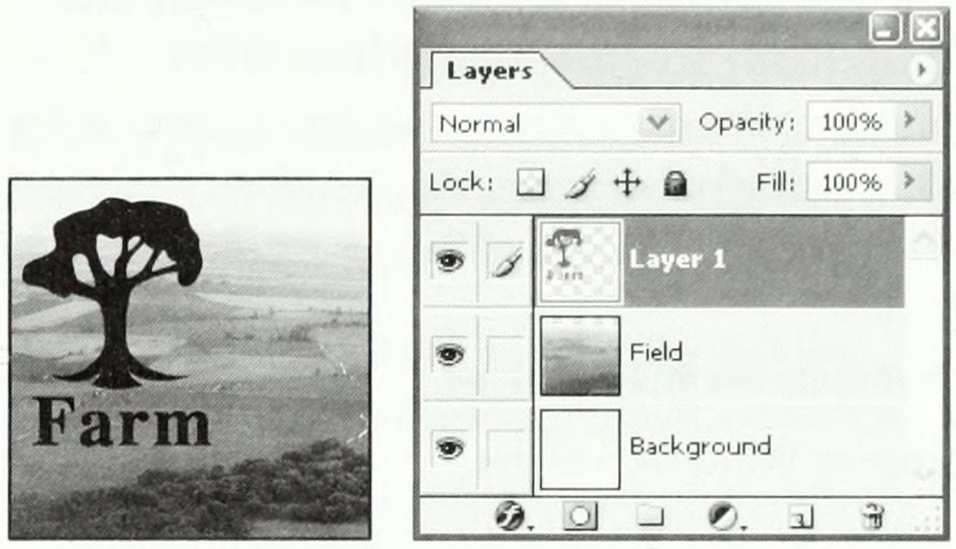


Illustration of a layer without a style

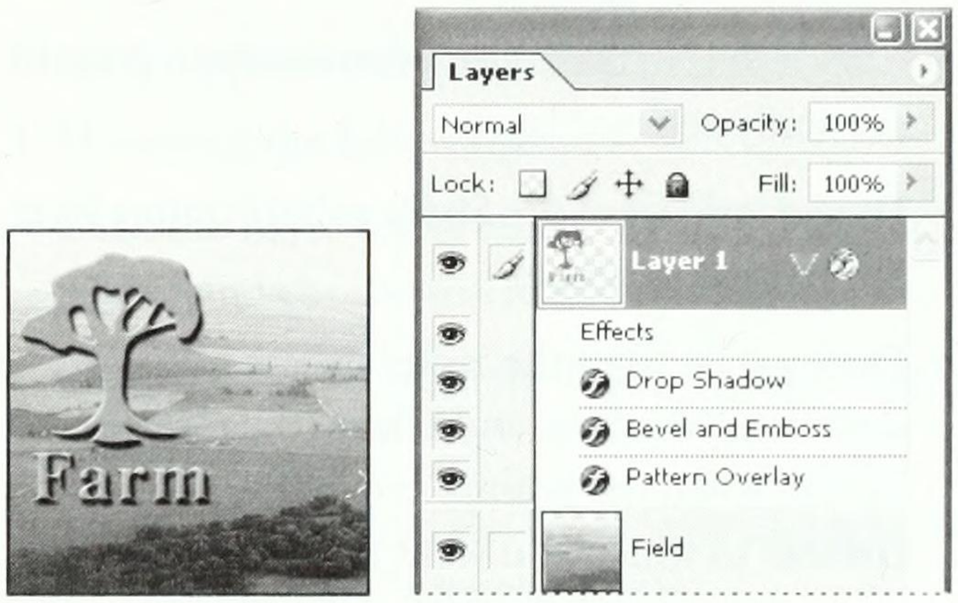


Illustration of a layer with a style

Note: *You cannot apply layer effects and styles to a background, a locked layer, or a layer set.*

Applying preset styles

The Styles palette, Layer Styles dialog box, and Layer Styles pop-up palette in the options bar for the Pen and Shape tool let you view and select preset layer styles. By default, applying a preset style replaces the current layer style. However, you can add the attributes of a second style to those of the current style using a keyboard modifier.

The layer styles that come with Photoshop and ImageReady are grouped into libraries by function. For example, one library contains styles for creating Web buttons; another library contains styles adding effects to text.

To display the Styles palette:

Choose Window > Styles.

To apply a preset style to a layer:

Do one of the following:

- Click a style in the Styles palette to apply it to the currently selected layer.
- Drag a style from the Styles palette onto a layer in the Layers palette.
- Drag a style from the Styles palette to the document window, and release the mouse button when the pointer is over the layer content to which you want to apply the style.

Note: *Hold down Shift while clicking or dragging to add the style to (instead of replace) any existing effects on the destination layer.*

- Choose Layer > Layer Style > Blending Options, and click the word *Styles* in the Layer Styles dialog box (top item in the list on the left side of the dialog box). Click the style you want to apply, and click OK.
- When using a Shape or Pen tool in shape layers mode, select a style from the pop-up palette in the options bar before drawing the shape.

To apply a style from an existing layer to another layer:

In the Layers palette, drag the style from a layer's effect list to another layer.

To create a new layer with the style of an existing layer (ImageReady):

In the Layers palette, drag the layer effects to the New Layer button.

To load a library of preset styles:

1 Click the triangle ▶ in the Styles palette, Layer Style dialog box (Photoshop), or Layer Style pop-up palette in the options bar when you have the Pen or Shape tool selected (Photoshop).

2 Do one of the following:

- Choose Load Styles (Photoshop) or Append Styles (ImageReady) to add a library to the current list. Then select the library file you want to use, and click Load.
- Choose Replace Styles to replace the current list with a different library. Then select the library file you want to use, and click Load.
- Choose a library file (displayed at the bottom of the palette menu). Then click OK to replace the current list, or click Append to append the current list.

Note: *You can also use the Preset Manager to load and reset style libraries. For more information,* *see "Managing libraries with the Preset Manager (Photoshop)" on page 43.*

To return to the default library of preset styles:

1 Click the triangle in the Styles palette, Layer Styles dialog box, or Layer Styles pop-up palette in the options bar (Photoshop).

2 Choose Reset Styles. You can either replace the current list or append the default library to the current list.

To change how preset styles are displayed:

1 Click the triangle in the Styles palette, Layer Styles dialog box, or Layer Styles pop-up palette in the options bar (Photoshop).

2 Choose a display option from the palette menu:

- (Photoshop) Text Only to view the layer styles as a list.
- Small or Large Thumbnail to view the layer styles as thumbnails.
- Small or (Photoshop) Large List to view the layer styles as a list, with a thumbnail of the selected layer style displayed.

Creating custom styles

You can create custom styles using one or more of the following effects:

Drop Shadow Adds a shadow that falls behind the contents on the layer.

Inner Shadow Adds a shadow that falls just inside the edges of the layer's content, giving the layer a recessed appearance.

Outer Glow and Inner Glow Add glows that emanate from the outside or inside edges of the layer's content.

Bevel and Emboss Add various combinations of highlights and shadows to a layer.

Satin Applies shading to the interior of a layer that reacts to the shape of the layer, typically creating a satiny finish.

Color, Gradient, and Pattern Overlay Fill the layer's content with a color, gradient, or pattern.

Stroke Outlines the object on the current layer using color, a gradient, or a pattern. It is particularly useful on hard-edged shapes such as type.

To apply a custom style to a layer:

1 Do one of the following:

- Click the Layer Styles button in the Layers palette and choose an effect from the list.
- Choose an effect from the Layer > Layer Style submenu.

2 Set effect options in the Layer Style dialog box. (See "Editing styles" on page 216.)

3 To add additional effects to the style, do one of the following:

- Repeat steps 1 and 2.
- Select additional effects in the Layer Style dialog box. Click the check box to the left of the effect name to add the effect without selecting it.

Displaying layer styles

When a layer has a style, an "f" icon appears to the right of the layer's name in the Layers palette. You can show or hide the style's effects in the image and in the Layers palette.

To hide or show all layer styles in an image:

Choose Layer > Layer Style > Hide All Layer Effects or Show All Layer Effects.

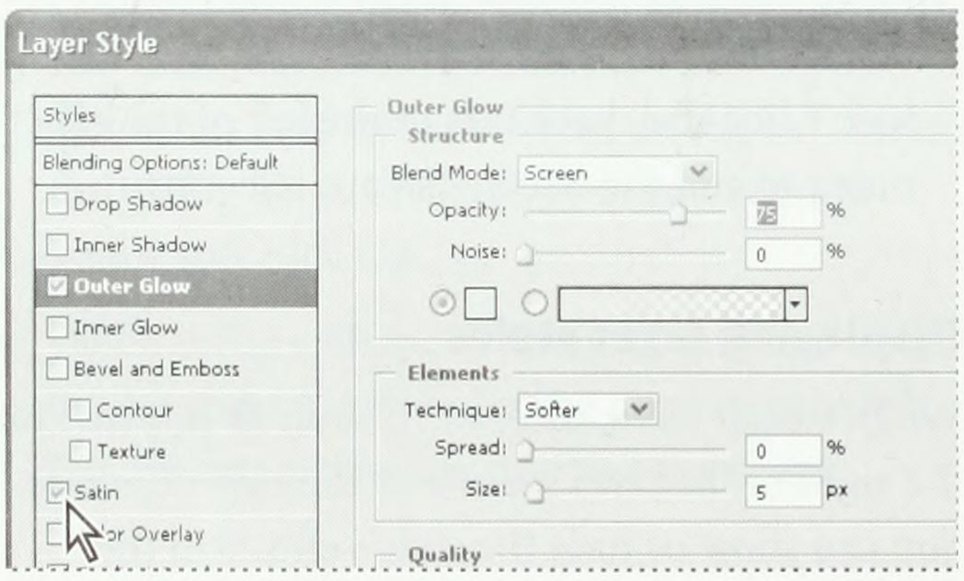
To expand or collapse layer styles in the Layers palette:

Do one of the following:

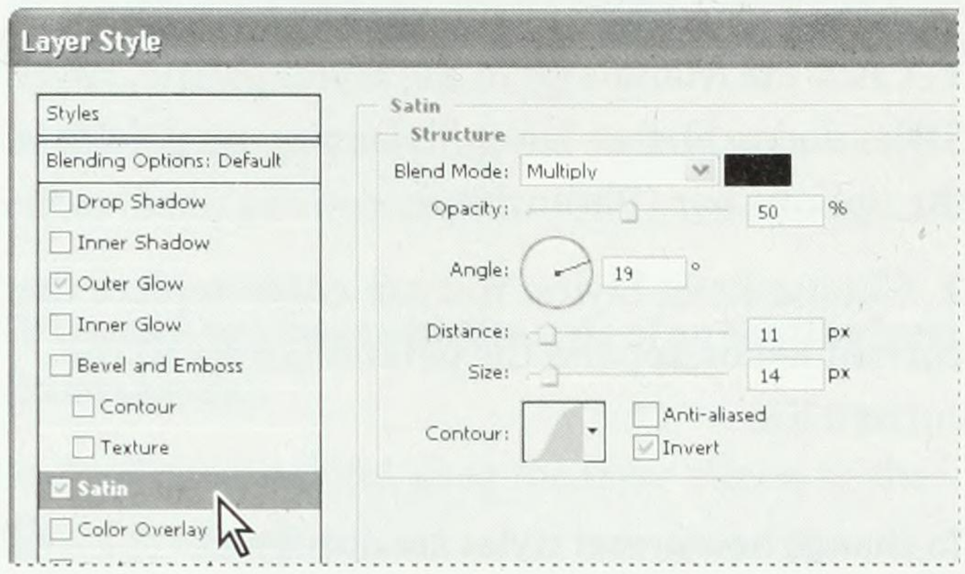
- Click the triangle next to the layer styles icon to expand the list of layer effects applied to that layer.
- Click the inverted triangle to collapse the layer effects.
- To expand or collapse all of the layer styles applied within a layer set, hold down Alt (Windows) or Option (Mac OS) and click the triangle or inverted triangle for the set. The layer styles applied to all layers within the layer set expand or collapse correspondingly.

Editing styles

You edit a layer's style by adjusting its effect settings.



Layer Style dialog box. Click a check box to apply the default settings without displaying the effect's options.



Click an effect name to display the effect's options.

To edit a layer style:

1 Do one of the following:

- In the Layers palette, double-click an effect displayed below the layer name. (Click the inverted triangle next to the "f" icon to display the effects contained in the style.)
- Choose Layer > Layer Style and the effect you want to edit.

2 Set one or more of the following options in the Layer Style dialog box. The available options depend on the selected effect:

You can edit multiple effects without closing the Layer Style dialog box. Select an effect on the left side of the dialog box to display an effect's options.

Angle Determines the lighting angle at which the effect is applied to the layer. In Photoshop, you can drag in the document window to adjust the angle of a Drop Shadow, Inner Shadow, or Satin effect.

Anti-alias Blends the edge pixels of a contour or gloss contour. Most useful on shadows with a small size and complicated contour.

Blend Mode Determines how the layer style blends with the underlying layers, which may or may not include the active layer. For example, an inner shadow blends with the active layer because the effect is drawn on top of that layer, but a drop shadow blends only with the layers beneath the active layer. In most cases, the default mode for each effect produces the best results. (See "Choosing a blending mode" on page 208.)

Choke Shrinks the boundaries of the matte of an Inner Shadow or Inner Glow prior to blurring.

Color Specifies the color of a shadow, glow, or highlight. You can click the color box and choose a color.

For more information on using the Adobe Color Picker, see Photoshop Help.

Contour With solid-color glows, Contour allows you to create rings of transparency. With gradient-filled glows, Contour allows you to create variations in the repetition of the gradient color and opacity. With bevel and emboss, Contour allows you to sculpt the ridges, valleys, and bumps that are shaded in the embossing process. With shadows, Contour allows you to specify the fade. For more information, see "Modifying layer effects with contours" on page 219.

Distance Specifies the offset distance for a shadow or satin effect. In Photoshop, you can drag in the document window to adjust the offset distance.

Depth Specifies the depth of a bevel and is a ratio of size. It also specifies the depth of a pattern.

Global Angle Turns on global lighting for the effect. Global lighting applies the same angle to all effects with the Global Angle option selected, giving the appearance of a consistent light source shining on the image. (See "Applying global lighting" on page 220.) Deselect Global Angle to assign a local angle to Drop Shadow, Inner Shadow, and Bevel effects.

Gloss Contour Creates a glossy, metal-like appearance and is applied after shading a bevel or emboss.

Gradient Specifies the gradient of a layer effect. In Photoshop, click the gradient to display the Gradient Editor or click the inverted arrow ▾ and choose a gradient from the pop-up palette. In Photoshop, you can edit a gradient or create a new gradient using the Gradient Editor. In ImageReady, click the inverted arrow ▾ next to the gradient sample and select a gradient from the list, or choose a gradient type from the pop-up list. You can edit the color or opacity in the Gradient Overlay panel the same way you do in the Gradient Editor. For some effects, you can specify additional gradient options. Reverse flips the orientation of the gradient, Align With Layer uses the bounding box of the layer to calculate the gradient fill, and Scale scales the application of the gradient. You can also use the mouse to move the center of the gradient by clicking and dragging in the image window. Style specifies the shape of the gradient.

For more information using the Gradient Editor, see Photoshop Help.

Highlight or Shadow Mode Specifies the blending mode of a bevel or emboss highlight or shadow.

Jitter Varies the application of a gradient's color and opacity.

Layer Knocks Out Drop Shadow Controls the drop shadow's visibility in a semitransparent layer.

Noise Specifies the amount of random elements in the opacity of a glow or shadow as you enter a value or drag the slider.

Opacity Sets the opacity of the layer effect as you enter a value or drag the slider.

Pattern Specifies the pattern of a layer effect. In ImageReady, click the inverted arrow ▾ next to the pattern sample and choose a pattern from the list. In Photoshop, click the pop-up palette and choose a pattern. Click the New preset button to create a new preset pattern based on the current settings. Click Snap to Origin to position the origin of the pattern with that of the document if Link with Layer is selected, or to position the origin with the top left corner of the layer if it is deselected. Select Link with Layer to specify that the pattern moves with the layer as it is relocated, and drag the Scale slider or enter a value to specify the size of the pattern. You can drag a pattern in the layer to position it while in this panel. The position can be reset with the Snap to Origin button. There must be at least one pattern loaded for the pattern option to be available. You can also load patterns using the Preset Manager.

Position Specifies the position of a stroke effect as Outside, Inside, or Center.

Range Controls which portion or range of the glow is targeted for the contour.

Size Specifies the amount of blur or the size of the shadow.

Soften Blurs the results of shading before compositing to reduce unwanted artifacts.

Source Specifies the glow source for an inner glow. Choose Center to apply a glow that emanates from the center of the layer's content, or Edge to apply a glow that emanates from the inside edges of the layer's content.

Spread Expands the boundaries of the matte prior to blurring.

Style Specifies the style of a bevel: Inner Bevel to create a bevel on the inside edges of the layer contents, Outer Bevel to create a bevel on the outside edges of the layer contents, Emboss to create the effect of embossing the layer contents against the underlying layers, Pillow Emboss to create the effect of stamping the edges of the layer contents into the underlying layers, or Stroke Emboss to confine the emboss to the boundaries of a stroke effect applied to the layer. (Note that the Stroke Emboss effect will not be visible if no stroke is applied to the layer.)

Technique For bevel and emboss, Smooth blurs the edges of a matte slightly and is useful for all types of mattes, whether their edges are soft or hard. It does not preserve detailed features at larger sizes. Chisel Hard uses a distance measurement technique and is primarily useful on hard-edged mattes from anti-aliased shapes such as type. It preserves detailed features better than the Smooth technique. Chisel Soft uses a modified distance measurement technique and, while not as accurate as Chisel Hard, it is more useful on a larger range of mattes. It preserves features better than the Smooth technique. For glows, Softer applies a blur and is useful on all types of mattes,

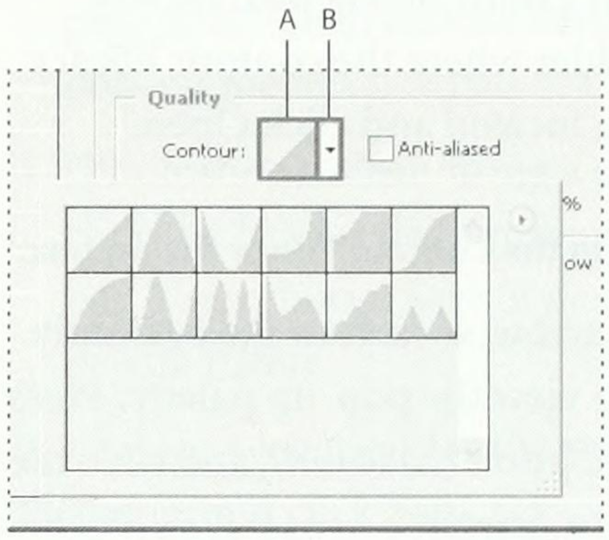
whether their edges are soft or hard. At larger sizes, it does not preserve detailed features. Precise uses a distance measurement technique to create a glow and is primarily useful on hard-edged mattes from anti-aliased shapes such as type. It preserves features better than the Softer technique.

Texture Allows you to specify a pattern used to texture the bevel effect. Scale allows you to scale the size of the texture. Link with Layer specifies that the texture moves with the layer as it is relocated. Invert inverts the texture. Depth varies the degree and direction (up/down) to which the texturing is applied. Snap to Origin controls the snap of the pattern's origin with that of the document if Link with Layer is disabled and with the top left corner of the layer if it is selected. You can also drag the texture with the mouse to position it while in this panel.

Modifying layer effects with contours

You can use contours to shape the appearance of an effect over a given range in the Drop Shadow, Inner Shadow, Inner Glow, Outer Glow, Bevel and Emboss, and Satin effects when creating custom layer styles. For example, a Linear contour on a Drop Shadow causes the opacity to drop off in a linear transition, while a Custom contour can be used to create a unique shadow transition. Custom contours created in Photoshop can be used in ImageReady.

You can select, reset, delete, or change the preview of contours in the contour pop-up palette and Preset Manager. For more information, see "Using pop-up palettes" on page 16 and "Managing libraries with the Preset Manager (Photoshop)" on page 43.



Detail of Layer Style dialog box for Drop Shadow effect
***A.** Click to display the Contour Editor dialog box.*
***B.** Click to display the pop-up palette.*

To create a custom contour:

1 Select the Drop Shadow, Inner Shadow, Inner Glow, Outer Glow, Bevel and Emboss, Contour, or Satin effect in the Layer Style dialog box. (See "Editing styles" on page 216.)

2 Click the contour thumbnail in the Layer Style dialog box.

3 Click the contour to add points and drag to adjust the contour. Or enter values for Input and Output.

4 To create a sharp corner instead of a smooth curve, select a point and click Corner.

5 To save the contour to a file, click Save and name the contour.

6 To store a contour as a preset, choose New.

7 Click OK. New contours are added at the bottom of the pop-up palette.

To load contours from the Contour Editor dialog box:

Click the contour in the Layer Style dialog box, and in the Contour Editor dialog box, choose Load. Go to the folder where the contour library you want to load is located and click Open.

To delete a contour in the Contour Editor dialog box:

Click the inverted arrow ▾ next to the currently selected contour to view the pop-up palette. Press Alt (Windows) or Option (Mac OS), and click the contour you want to delete.

Applying global lighting

Using global light gives the appearance of a consistent light source shining on the image.

To set a global lighting angle:

To set a global lighting angle for all layers, do one of the following:

- Choose Layer > Layer Style > Global Light. In the Global Light dialog box, enter a value or drag the angle radius to set the Angle and Altitude, and click OK.
- In the Layer Style dialog box for Drop Shadow, Inner Shadow, or Bevel, select Use Global Light. For Angle, enter a value or drag the slider, and click OK.

The new lighting angle appears as the default for each layer effect that uses the global lighting angle.

Creating and managing preset styles

After you customize a layer style, you can save it as a preset style. Preset styles appear in the Styles palette, Layer Styles dialog box, Layer Styles pop-up palette in the options bar for the Pen and Shape tool, and Preset Manager. (See "Applying preset styles" on page 213.) You can also create libraries of preset styles, rename preset styles, and delete preset styles.

To create a new preset style:

1 In the Layers palette, select the layer that contains the style you want to save as a preset.

2 Do one of the following:

- Drag the selected layer into the Styles palette or onto the New Item button ▣ in the Styles palette.
- Click an empty area of the Styles palette.
- Press Alt (Windows) or Option (Mac OS) and click the New Item button at the bottom of the Styles palette.
- Choose New Style from the Styles palette menu.
- Choose Layer > Layer Style > Blending Options, and click New Style in the Layer Style dialog box.

3 Enter a name for the preset style, set style options, and click OK.

To create a preset style from a single effect, drag the effect from the Layers palette to the Styles palette.

To rename a preset style:

Do one of the following:

- Double-click a style in the Styles palette. If the Styles palette is set to display styles as thumbnails, enter a new name in the dialog box, and click OK. Otherwise, type a new name directly in the Style palette, and press Enter (Windows) or Return (Mac OS).
- Select a style in the Styles area of the Layer Styles dialog box. (See "Applying preset styles" on page 213.) Then choose Rename Style from the pop-up menu, enter a new name, and click OK.
- (Photoshop) When using a shape or pen tool, select a style from the Layer Style pop-up palette in the options bar. Then choose Rename Style from the pop-up palette menu.

To delete a preset style:

Do one of the following:

- Drag a style to the Trash button at the bottom of the Styles palette.
- Press Alt (Windows) or Option (Mac OS) and click the layer style in the Styles palette.
- (Photoshop) Select a style in the Styles area of the Layer Styles dialog box. (See "Applying preset styles" on page 213.) Then choose Delete Style from the pop-up menu.
- (Photoshop) When using a shape or pen tool, select a style from the Layer Style pop-up palette in the options bar. Then choose Delete Style from the pop-up palette menu.

To save a set of preset styles as a library:

1 Do one of the following:

- Choose Save Styles from the Styles palette menu.
- Select Styles on the left side of the Layer Styles dialog box. (See "Applying preset styles" on page 213.) Then choose Save Styles from the pop-up menu.
- (Photoshop) When using a shape or pen tool, click the layer style thumbnail in the options bar. Then choose Save Styles from the pop-up palette menu.

2 Choose a location for the style library, enter a filename, and click Save.

You can save the library anywhere. However, if you place the library file in the Presets/Styles folder inside the Photoshop program folder, the library name will appear at the bottom of the Styles palette menu when you restart the application.

Note: *You can also use the Preset Manager to rename, delete, and save libraries of preset styles. For more information, see "Managing libraries with the Preset Manager (Photoshop)" on page 43.*

Copying and pasting styles

Copying and pasting styles is an easy way to apply the same effects to multiple layers.

To copy layer styles between layers:

1 In the Layers palette, select the layer containing the style you want to copy.

2 Choose Layer > Layer Style > Copy Layer Style.

3 Do one of the following:

- To paste into a single layer, select the destination layer in the palette, and choose Layer > Layer Style > Paste Layer Style.
- To paste into multiple layers, link the destination layers. (See "Linking layers" on page 200.) Then choose Layer > Layer Style > Paste Layer Style to Linked.

The pasted layer style will replace the existing layer style on the destination layer or layers.

To copy layer styles between layers by dragging:

Do one of the following:

- In the Layers palette, drag a single layer effect from one layer to another to duplicate the layer effect, or drag the Effects bar from one layer to another to duplicate the layer style.
- Drag one or more layer effects from the Layers palette to the image to apply the resulting layer style to the highest layer in the Layers palette that contains pixels at the drop point.

Scaling layer effects

A layer style may have been tuned to look best on a target resolution with features of a given size. Using Scale Effects allows you to scale the effects contained in the layer style without scaling the object to which the layer style is applied.

To scale a layer effect:

1 Select the layer in the Layers palette.

2 Choose Layer > Layer Style > Scale Effects.

3 Enter a percentage or drag the slider.

4 Select Preview to preview the changes in the image.

5 Click OK.

Removing layer effects

You can remove individual effects from a layer style and remove a style from the layer.

To remove an effect from a style:

1 In the Layers palette, expand the layer style so you can see its effects.

2 Do one of the following:

- Drag the effect to the Trash button.
- (ImageReady) Select the effect, and choose Delete Effect from the Layers palette menu.

To remove a style from a layer:

1 In the Layers palette, select the layer containing the style you want to remove.

2 Do one of the following:

- In the Layers palette, drag the Effects bar to the Trash button.
- Choose Layer > Layer Style > Clear Layer Style.
- Select the layer, and then click the Clear Style button ⃠ at the bottom of the Styles palette.
- (ImageReady) Select an effect in the Layers palette, and choose Delete All Effects from the Layers palette menu.

Converting layer styles to layers

To customize or fine-tune the appearance of layer styles, you can convert the layer styles to regular image layers. Once you have converted a layer style to image layers, you can enhance the result by painting or applying commands and filters. However, you can no longer edit the layer style on the original layer, and the layer style will no longer update as you change the original image layer.

Note: *The layers produced by this process may not result in artwork that exactly matches the version using layer styles. In Photoshop, you may see an alert when you create the new layers.*

To convert a layer style to image layers:

1 In the Layers palette, select the layer containing the layer style you want to convert.

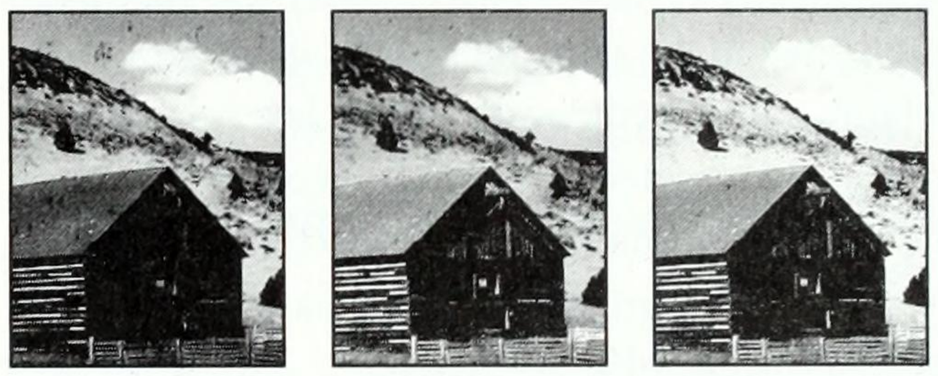
2 Choose Layer > Layer Style > Create Layers.

You can now modify and restack the new layers in the same way as regular layers. Some effects—for example, Inner Glow—convert to layers within a clipping mask.

You can also drag a layer style to the New Layer button at the bottom of the Layers palette to generate a new layer from an existing style.

Using adjustment layers and fill layers (Photoshop)

Adjustment layers and fill layers add another level of flexibility to working with layers. Adjustment layers allow you to experiment with color and apply tonal adjustments to an image; fill layers allow you to quickly add color, patterns, and gradient elements to an image. If you change your mind about the results, you can go back and edit or remove the adjustment or fill at any time.



Original, adjustment layer applied to barn only (which brings out more detail in the barn), and adjustment layer applied to entire image (which lightens everything but pixelates the clouds)

About adjustment layers and fill layers

Adjustment layers let you experiment with color and tonal adjustments to an image without permanently modifying the pixels in the image. The color and tonal changes reside within the adjustment layer, which acts as a veil through which the underlying image layers appear. Keep in mind that an adjustment layer affects all the layers below it. This means that you can correct multiple layers by making a single adjustment, rather than making the adjustment to each layer separately.

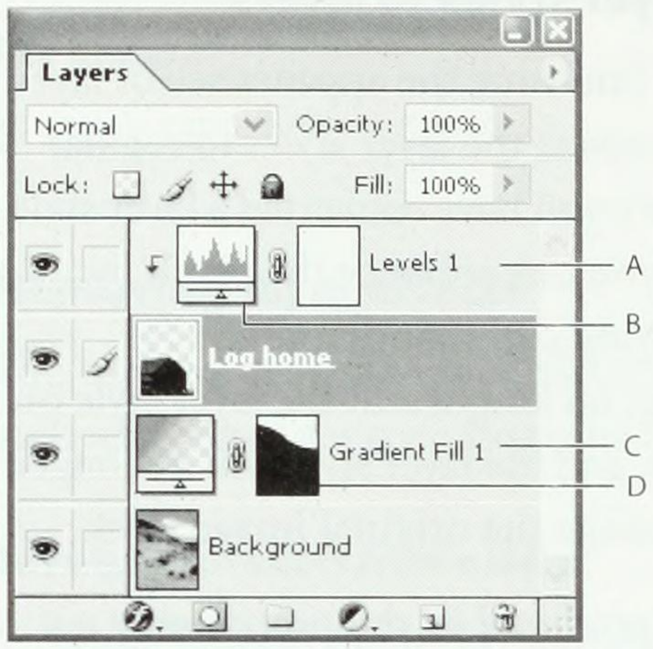
Note: *Adjustment layers can be applied and edited only in Photoshop; however, they can be viewed in ImageReady.*

Fill layers let you fill a layer with a solid color, a gradient, or a pattern. Unlike adjustment layers, fill layers do not affect the layers underneath them.

Creating adjustment layers or fill layers

Adjustment layers and fill layers have the same opacity and blending mode options as image layers and can be rearranged, deleted, hidden, and duplicated in the same manner as image layers. By default, adjustment layers and fill layers have layer masks, as indicated by the mask icon to the left of the layer thumbnail. If a path is active when you create the adjustment or fill layer, a vector mask is created instead of a layer mask.

To confine the effects of an adjustment layer to a group of layers, create a clipping mask consisting of these layers. You can place the adjustment layers in or at the base of the clipping mask. The adjustment will be confined to the layers inside the group. (See "Creating clipping masks" on page 234.) Alternately, you can create a layer set, and have the set use any blending mode other than Pass Through.



Adjustment and fill layers
A. *Adjustment layer confined to Log home layer only*
B. *Layer thumbnail* ***C.*** *Fill layer affecting all layers below it* ***D.*** *Layer mask*

To create an adjustment layer or fill layer:

1 Do one of the following:

- Click the New Adjustment Layer button at the bottom of the Layers palette, and choose the layer type you want to create.
- Choose Layer > New Fill Layer, and choose an option from the submenu. Then name the layer, set other layer options, and click OK. (See "Setting opacity and blending options" on page 207 and "Creating clipping masks" on page 234.)
- Choose Layer > New Adjustment Layer, and choose an option from the submenu. Then name the layer, set other layer options, and click OK. (See "Setting opacity and blending options" on page 207 and "Creating clipping masks" on page 234.)

Note: *To confine the effects of the adjustment layer or fill layer to a selected area, make a selection, create a closed path and select it, or select an existing closed path. When you use a selection, you create an adjustment layer or fill layer confined by a layer mask. When you use a path, you create an adjustment layer or fill layer confined by a vector mask.*

2 Choose from the following layer properties, and then click OK.

Solid Color Specify a color.

For more information on using the Adobe Color Picker, see Photoshop Help.

Gradient Click the gradient to display the Gradient Editor, or click the inverted arrow ▾ and choose a gradient from the pop-up palette. Set additional options if desired. Style specifies the shape of the gradient. Angle specifies the angle at which the gradient is applied. Scale changes the size of the gradient. Reverse flips the orientation of the gradient. Dither reduces banding by applying dithering to the gradient. Align with Layer uses the bounding box of the layer to calculate the gradient fill. You can use the mouse to move the center of the gradient by clicking and dragging in the image window.

For more information using the Gradient Editor, see Photoshop Help.

Pattern Click the pattern, and choose a pattern from the pop-up palette. Click Scale and enter a value or drag the slider to scale the pattern. Click Snap to Origin to position the origin of the pattern with that of the document window. (See "Using rulers, columns, the Measure tool, guides, and the grid" on page 32.) Select Link with Layer to specify that the pattern moves with the fill layer as it is relocated. When Link With Layer is selected, you can drag in the image to position the pattern while the Pattern Fill dialog box is open.

Levels Specify values for the highlights, shadows, and midtones.

Curves Adjust the intensity values of pixels along a 0–255 scale while keeping up to 15 other values constant.

Color Balance Drag a slider toward a color you want to increase in the image; drag a slider away from a color you want to decrease in the image.

Brightness/Contrast Specify values for Brightness and Contrast.

Hue/Saturation Choose which colors to edit, and specify values for Hue, Saturation, and Lightness.

Selective Color Choose the color you want to adjust, and drag the sliders to increase or decrease the components in the selected color.

Channel Mixer Modify a color channel.

Gradient Map Choose a gradient and set gradient options.

Photo Filter Make color adjustments by simulating the effect of a filter in front of a camera lens.

Invert Inverted adjustment layers don't have options.

Threshold Specify a threshold level.

Posterize Specify the number of tonal levels for each color channel.

For more information on Levels, Curves, Color Balance, Brightness/Contrast, Hue/Saturation, Selective Color, Gradient Map, Photo Filter, Invert, Threshold, and Posterize, see Photoshop Help.

Editing adjustment layers or fill layers

Once you create an adjustment or fill layer, you can easily edit the settings, or dynamically replace it with a different adjustment or fill type. You can also edit the mask of an adjustment layer or fill layer to control the effect that the layer has on the image. By default, all areas of an adjustment or fill layer are "unmasked" and, therefore, are showing. (See "Creating and editing layer masks" on page 230.)

To edit an adjustment or fill layer:

1 Do one of the following:

- Double-click the adjustment or fill layer's thumbnail in the Layers palette.
- Choose Layer > Layer Content Options.

2 Make the desired adjustments, and click OK.

Note: *Inverted adjustment layers do not have editable settings.*

To change the content of an adjustment or fill layer:

1 Select the adjustment layer or fill layer that you want to change.

2 Choose Layer > Change Layer Content and select a different fill or adjustment layer from the list.

Merging adjustment layers or fill layers

You can merge an adjustment or fill layer several ways: with the layer below it, with the layers in its own grouped layer, with the layers it is linked to, and with all other visible layers. You cannot, however, use an adjustment layer or fill layer as the target layer for a merge. When you merge an adjustment layer or fill layer with the layer below it, the adjustments are rasterized and become permanently applied within the merged layer. (See "Merging and stamping layers" on page 205.) You can also rasterize a fill layer without merging it. (See "Rasterizing layers" on page 204.)

Adjustment layers and fill layers whose masks contain only white values do not add significantly to the file size, so it is not necessary to merge these adjustment layers to conserve file space.

Working with layer comps

Designers often create multiple compositions or *comps* of a page layout to show clients. Using layer comps, you can create, manage and view multiple versions of a layout in a single Photoshop or ImageReady file. Layer comps are fully interchangeable between Photoshop and ImageReady.

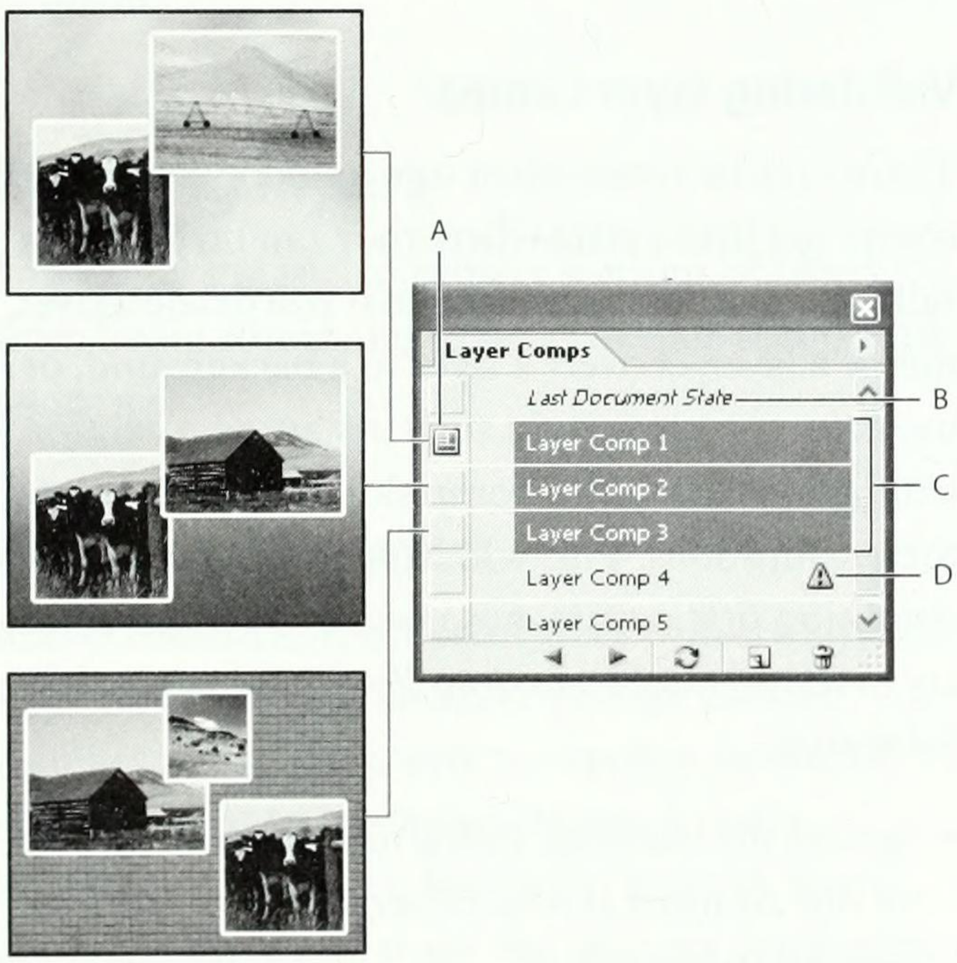
Note: *ImageReady reads only RGB files, so pay special attention to RGBs you get from color conversions (from CMYK, Lab, and so on) in Photoshop. This is important in testing your layer comps.*

About layer comps and the Layer Comps palette

A layer comp is a snapshot of a state of the Layers palette. Layer comps record three types of layer options:

- Layer visibility—whether a layer in the Layers palette is showing or hidden
- Layer position in the document
- Layer appearance—whether a layer style is applied to the layer

You create a comp by making changes to the layers in your document and *updating* the comp in the Layer Comps palette. You view comps by *applying* them in the document. Choose Window > Layer Comps to show the palette.



Layer Comps palette
A. *Apply Layer Comp icon* ***B.*** *Last Document State*
C. *Selected comps* ***D.*** *Layer Comp Cannot Be Fully Restored icon*

Creating a layer comp

To create a layer comp, you work with the Layers palette and the Layer Comp palette.

To create a layer comp:

1 Do one of the following:

- Choose Window > Layer Comps to bring up the Layer Comp palette. Click the Create New Layer Comp button at the bottom of the Layer Comps palette. The new comp will be based on the current state of layers in the Layers palette.
- To duplicate a comp, select a comp in the Layer Comps palette and choose Duplicate Comp from the Layer Comps palette menu, or drag the comp to the New comps button.

2 In the New Layer Comp dialog box, name the comp, add descriptive comments, and choose options to apply to layers: Visibility (defaults to On), Position, and Appearance. Then click OK. Note that any new comp preserves the options you chose for the previous one, so you won't have to go through all these choices again if you want them to be identical.

3 To change your comp options, select Layer Comp Options from the palette menu, or double click the layer comp you want to change (Don't double click the name of the layer comp, as that will let you change only the name.) As you make changes, periodically click the Update Layer Comp button at the bottom of the Comps palette (make sure that the comp you want to update is selected).

Viewing layer comps

To view a layer comp, you first need to apply it in the document. In the Layer Comp palette, click the Apply Layer Comp icon next to a selected comp.

To cycle through a view of all the layer comps, use the Previous ◄ and Next ► buttons at the bottom of the palette.

To cycle through a view of specific selected comps, select the comps in the Layer Comps palette and then click the Next and Previous buttons at the bottom of the palette. This will cycle only through the comps you have selected.

Applying layer comps

To apply a layer comp, do one of the following:

- In the Layer Comp palette, click the Apply Layer Comp icon next to a selected comp. You can apply the previous and next layer comp by clicking on the backward and forward buttons at the bottom of the Layer Comps palette.
- Choose Apply Layer Comp from the Layer Comps palette menu.

Updating layer comps

You can save changes to a layer comp by selecting it in the Layer Comps palette and then clicking the Update Layer Comp button on the bottom of the palette. This rewrites an existing layer comp, bringing it up to date. For example, if your current comp has captured a certain document configuration (that is, certain layers visible, certain styles applied to some of your layers, and certain positions of the layers pixels on the canvas), and later you modify some of the parameters, making the original comp layer obsolete, you can simply update the existing layer comp to preserve the new configuration.

Restoring layer comps

When you apply any number of layer comps to view how they change your document, you have the option of restoring the document to its original state. Do one of the following to restore your document:

- Click on the Apply This Layer Comp icon next to the Last Document State.
- With any layer comp selected, choose Restore Last Document State from the palette menu.

Validating layer comps

There may be times when one or all of your layer comps get into a state where they can no longer be fully restored. This can happen if you delete a layer, merge a layer, convert a layer to a background, or use color conversion. In such instances, a caution icon ⚠ appears on the comp slots that meet one of these conditions. This will happen when the condition first occurs, not necessarily when you try to restore the layer comp. You can do one of the following:

- Ignore the warning, which may result in the loss of one or more layers. Other saved parameters may be preserved.
- Update the comp, which will result in the loss of the previously captured parameters, but will bring the comp up to date.

Click the caution icon to see a message that explains that the layer comp cannot be restored properly. Choose Clear to remove the alert icon and leave the remaining layers unchanged.

Right-click (Windows) or Control-click (Mac OS) the caution icon to see the popup menu that lets you choose either the Clear Layer Comp Warning or the Clear All Layer Comp Warnings command.

Deleting layer comps

To delete a layer comp, select the layer comp in the Layer Comps palette and do one of the following:

- Click the Trash button in the palette.
- Drag it to the Trash button in the palette
- Choose Delete Layer Comp from the palette menu.

Masking layers

You can use masks to protect sections of layers from being edited and to show or hide sections of an image.

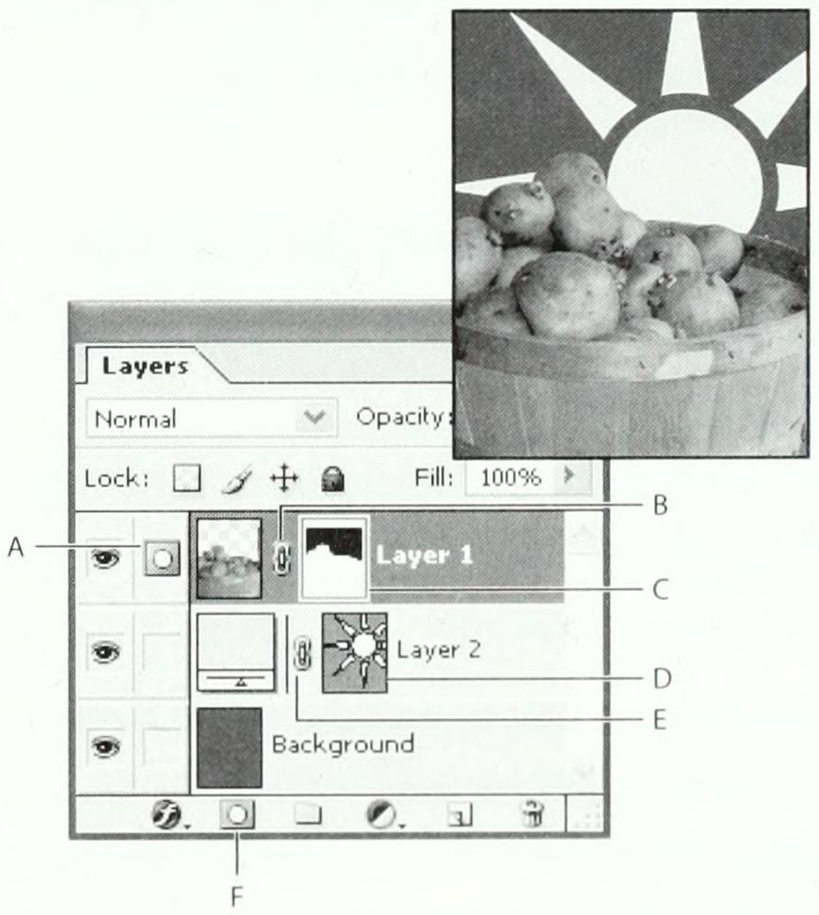
About masking layers

Masks control how different areas within a layer or layer set are hidden and revealed. By making changes to the mask, you can apply a variety of special effects to the layer without actually affecting the pixels on that layer. You can then apply the mask and make the changes permanent or remove the mask without applying the changes.

There are two types of masks:

- Layer masks are resolution-dependent bitmap images that are created with the painting or selection tools.
- (Photoshop) Vector masks are resolution independent and are created with the Pen or Shape tools.

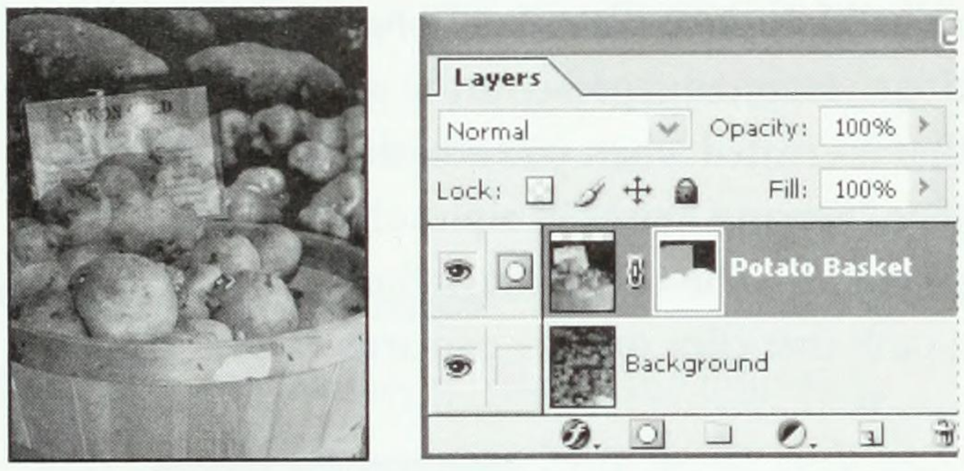
In the Layers palette, both the layer and vector masks appear as an additional thumbnail to the right of the layer thumbnail. For the layer mask, this thumbnail represents the grayscale channel that is created when you add the layer mask. (See "Storing masks in alpha channels" on page 132.) The vector mask thumbnail represents a path that clips out the contents of the layer.



Masking layers
A. *Layer mask selected* ***B.*** *Layer mask link icon*
C. *Layer mask thumbnail* ***D.*** *Vector mask thumbnail*
E. *Vector mask link icon* ***F.*** *New Layer Mask*

Creating and editing layer masks

You can obscure an entire layer or layer set, or just a selected part of it, using a layer mask. You can also edit a layer mask to add or subtract from the masked region. A layer mask is a grayscale image, so what you paint in black will be hidden, what you paint in white will show, and what you paint in gray shades will show in various levels of transparency.



Background painted with black, description card painted with gray, basket painted with white

To add a mask that shows or hides the entire layer:

1 Choose Select > Deselect to clear any selection borders in the image.

2 In the Layers palette, select the layer or layer set to which to add a mask.

3 Do one of the following:

- To create a mask that reveals the entire layer, click the New Layer Mask button in the Layers palette, or choose Layer > Add Layer Mask > Reveal All.
- To create a mask that hides the entire layer, Alt click (Windows) or Option-click (Mac OS) the New Layer Mask button, or choose Layer > Add Layer Mask > Hide All.

To add a mask that shows or hides a selection:

1 In the Layers palette, select the layer or layer set to which to add a mask.

2 Select the area in the image, and do one of the following:

- Click the New Layer Mask button in the Layers palette to create a mask that reveals the selection.
- Choose Layer > Add Layer Mask > Reveal Selection or Hide Selection.

To duplicate a mask (ImageReady):

You can duplicate a layer mask and apply it to another layer by Alt-dragging (Windows) or Option-dragging (Mac OS) it to the target layer.

To edit a layer mask:

1 Click the layer mask thumbnail in the Layers palette to make it active.

2 Select any of the editing or painting tools.

Note: *The foreground and background colors default to grayscale values when the mask is active.*

3 Do one of the following:

- To subtract from the mask and reveal the layer, paint the mask with white.
- To make the layer partially visible, paint the mask with gray.
- To add to the mask and hide the layer or layer set, paint the mask with black.

To edit the layer instead of the layer mask, select it by clicking its thumbnail in the Layers palette. The paintbrush icon appears to the left of the thumbnail to indicate that you are editing the layer.

To paste a copied selection into a layer mask, Alt-click (Windows) or Option-click (Mac OS) the layer mask thumbnail in the Layers palette to select and display the mask channel. Choose Edit > Paste, drag the selection in the image to produce the desired masking effect, and choose Select > Deselect. Click the layer thumbnail in the Layers palette to deselect the mask channel.

To select and display the layer mask channel (Photoshop):

Do one of the following:

- Alt-click (Windows) or Option-click (Mac OS) the layer mask thumbnail to view only the grayscale mask. The eye icons in the Layers palette are dimmed because all layers or layer sets are hidden. To redisplay the layers, Alt-click or Option-click the layer mask thumbnail, or click an eye icon.
- Hold down Alt+Shift (Windows) or Option+Shift (Mac OS), and click the layer mask thumbnail to view the mask on top of the layer in a rubylith masking color. Hold down Alt+Shift or Option+Shift, and click the thumbnail again to turn off the color display.

To disable or enable a layer mask:

Do one of the following:

- Shift-click the layer mask thumbnail in the Layers palette.
- Select the layer with the layer mask you want to disable or enable, and choose Layer > Disable Layer Mask or Layer > Enable Layer Mask.

A red *X* appears over the mask thumbnail in the Layers palette when the mask is disabled, and the layer's content appears without masking effects.

To change the rubylith display for a layer mask (Photoshop):

1 Do one of the following:

- Alt-click (Windows) or Option-click (Mac OS) the layer mask thumbnail to select the layer mask channel; then double-click the layer mask thumbnail.
- Double-click the layer mask channel in the Channels palette.

2 To choose a new mask color, in the Layer Mask Display Options dialog box, click the color swatch, and choose a new color.

3 To change the opacity, enter a value between 0% and 100%.

Both the color and opacity settings affect only the appearance of the mask and have no effect on how underlying areas are protected. For example, you might want to change these settings to make the mask more easily visible against the colors in the image.

4 Click OK.

Creating and editing vector masks

A vector mask creates a sharp-edged shape on a layer and is useful any time you want to add a design element with clean, defined edges. Once you create a layer with a vector mask, you can apply one or more layer styles to it, edit them if needed, and instantly have a usable button, panel, or other Web design element.

To add a vector mask that shows or hides the entire layer (Photoshop):

1 In the Layers palette, select the layer to which you want to add a vector mask.

2 Do one of the following:

- To create a vector mask that reveals the entire layer, choose Layer > Add Vector Mask > Reveal All.
- To create a vector mask that hides the entire layer, choose Layer > Add Vector Mask > Hide All.

To add a vector mask that shows the contents of a shape (Photoshop):

1 In the Layers palette, select the layer to which to add a vector mask.

2 Select a path or use one of the shape or pen tools to draw a work path.

For more information on creating a work path, see Photoshop Help.

3 Choose Layer > Add Vector Mask > Current Path.

To edit a vector mask (Photoshop):

Click the vector mask thumbnail in the Layers palette or the thumbnail in the Paths palette. Then change the shape using the shape and pen tools.

To remove a vector mask:

Do one of the following in the Layers palette:

- Drag the vector mask thumbnail to the Trash button 🗑.
- (Photoshop) Select the layer with the vector mask you want to delete, and choose Layer > Delete Vector Mask.

To disable or enable a vector mask:

Do one of the following:

- Shift-click the vector mask thumbnail in the Layers palette.
- (Photoshop) Select the layer with the vector mask you want to disable or enable, and choose Layer > Disable Vector Mask or Layer > Enable Vector Mask.

A red *X* appears over the mask thumbnail in the Layers palette when the mask is disabled, and the layer's content appears without masking effects.

To convert a vector mask to a layer mask (Photoshop):

Select the layer with the vector mask you want to convert, and choose Layer > Rasterize > Vector Mask.

Important: *Once you rasterize a vector mask, it cannot be changed back into a vector object.*

Unlinking layers and masks

By default, a layer or layer set is linked to its layer mask or vector mask, as indicated by the link icon between the thumbnails in the Layers palette. The layer and its mask move together in the image when you move either one with the Move tool. Unlinking them lets you move them independently and shift the mask's boundaries separately from the layer.

To unlink a layer from its mask:

Click the link icon in the Layers palette.

To reestablish the link between a layer and its mask:

Click between the layer and mask path thumbnails in the Layers palette.

Applying and discarding layer masks

When you have finished creating a layer mask, you can either apply the mask and make the changes permanent or discard the mask without applying changes. Because layer masks are stored as alpha channels, applying and discarding layer masks can help reduce file size. (See "Storing masks in alpha channels" on page 132.)

To apply or discard a layer mask:

1 Click the layer mask thumbnail in the Layers palette.

2 To remove the layer mask and make changes permanent, click the Trash button at the bottom of the Layers palette, and then click Apply (Photoshop) or Yes (ImageReady).

3 To remove the layer mask without applying the changes, click the Trash button at the bottom of the Layers palette, and then click Discard (Photoshop) or No (ImageReady).

You can also apply or discard layer masks using the Layer menu.

Selecting opaque areas on a layer

By loading a layer mask, you can quickly select all the opaque areas on a layer—that is, the areas within the layer boundaries. This is useful when you want to exclude transparent areas from a selection. You can also load the boundaries of a layer mask as a selection.

To load a layer or layer mask's boundaries as a selection:

Do one of the following:

- In the Layers palette, Ctrl-click (Windows) or Command-click (Mac OS) the layer or layer mask thumbnail.
- To add the pixels to an existing selection, press Ctrl+Shift (Windows) or Command+Shift (Mac OS), and click the layer or layer mask thumbnail in the Layers palette.
- To subtract the pixels from an existing selection, press Ctrl+Alt (Windows) or Command+Option (Mac OS), and click the layer or layer mask thumbnail in the Layers palette.

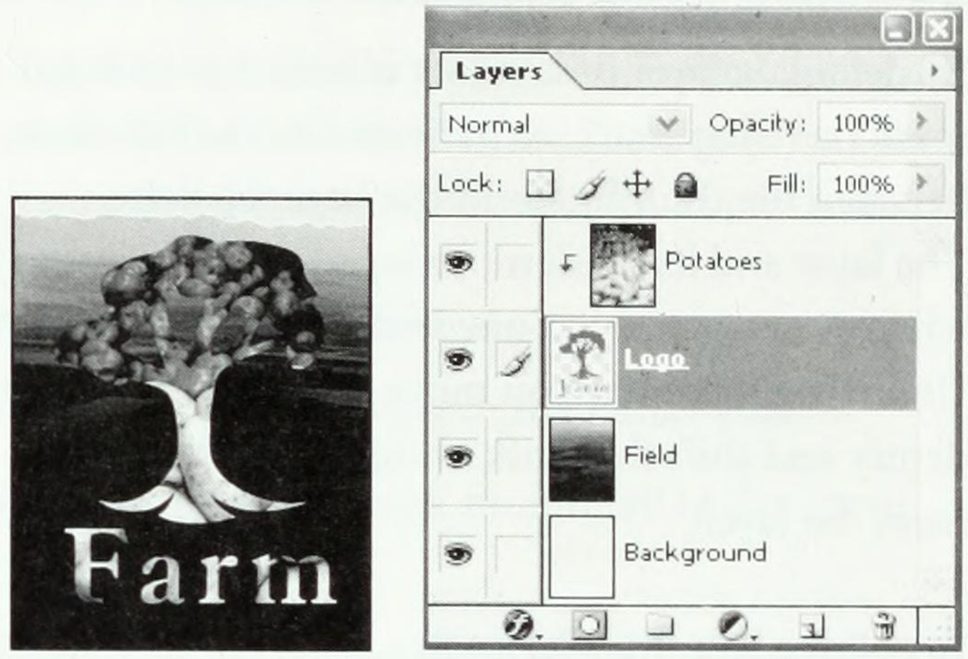
- To load the intersection of the pixels and an existing selection, press Ctrl+Alt+Shift (Windows) or Command+Option+Shift (Mac OS), and click the layer or layer mask thumbnail in the Layers palette.

If you want to move all the contents of a layer, use the Move tool without loading a transparency mask.

Creating clipping masks

You can use the content of a layer to mask the layers above it. The transparent pixels of the bottom or *base layer* mask out the content of layers above it that are part of a *clipping mask*. For example, you might have a shape on one layer, a texture on the overlying layer, and some text on the topmost layer. If you define all three layers as part of a clipping mask, the texture and the text appear only through the shape on the base layer, and take on the opacity of the base layer.

Note that only successive layers can be included in a clipping mask. The name of the base layer in the mask is underlined, and the thumbnails for the overlying layers are indented. Additionally, the overlying layers display a clipping mask icon ↳. The Blend Clipped Layers as Group option in the Layer Style dialog box determines whether the blending mode of the base affects the whole group or just the base. (See "Grouping blend effects" on page 211.)



Clipping mask with Potatoes and Logo layers

To create a clipping mask:

Do one of the following:

- Hold down Alt (Windows) or Option (Mac OS), position the pointer over the line dividing two layers in the Layers palette (the pointer changes to two overlapping circles), and click.
- Select a layer in the Layers palette, and choose Layer > Create Clipping Mask.
- Link the desired layers in the Layers palette. (See "Linking layers" on page 200.) Then choose Layer > Create Clipping Mask from Linked.

The clipping mask is assigned the opacity and mode attributes of the bottommost layer in the group.

To duplicate a clipping mask to another layer

1 Select the clipping mask.

2 Alt-click (Windows) or Option-click (Mac OS) the mask and drag it to the destination layer. Make sure the destination layer highlights before letting go of the mouse button; otherwise, the layer won't receive the mask properly.

To remove a layer from a clipping mask:

Do one of the following:

- Hold down Alt (Windows) or Option (Mac OS), position the pointer over the line separating two grouped layers in the Layers palette (the pointer changes to two overlapping circles), and click.
- In the Layers palette, select a layer in the clipping mask, and choose Layer > Release Clipping Mask. This command removes the selected layer and any layers above it from the clipping mask.

To ungroup all layers in a clipping mask:

1 In the Layers palette, select the base layer in the clipping mask.

2 Choose Layer > Release Clipping Mask.

Chapter 11: Applying Filters for Special Effects

Filters let you apply special effects to your images, such as impressionistic or mosaic effects, lighting effects, and distortions. You can also create your own effects using the Custom filter or the Filter Factory (included on the Adobe Photoshop CD).

Using filters

To use a filter, choose the appropriate submenu command from the Filter menu. These guidelines can help you in choosing filters:

- Filters are applied to the active, visible layer or a selection.
- Most filters can be applied cumulatively using the Filter Gallery. All filters can be applied individually.
- Filters cannot be applied to Bitmap-mode or indexed-color images.
- Some filters work only on RGB images.
- All filters can be applied to 8-bit images. Only the following filters can be applied to 16-bit images: Blur, Average Blur, Blur More, Gaussian Blur, Motion Blur, Noise, Add Noise, Despeckle, Dust & Scratches, Median, Sharpen, Sharpen Edges, Sharpen More, Unsharp Mask, Stylize, Emboss, Find Edges, and Solarize.
- Some filters are processed entirely in RAM. If all your available RAM is used to process a filter effect, you may get an error message (see "Improving filter performance" on page 242).

For information on specific filters, search for the filter name in Photoshop Help.

Using the Filter Gallery

Using the Filter Gallery, you can apply filters cumulatively, and apply individual filters more than once. You can also rearrange filters and change the settings of each filter you've applied to achieve the effect you want.

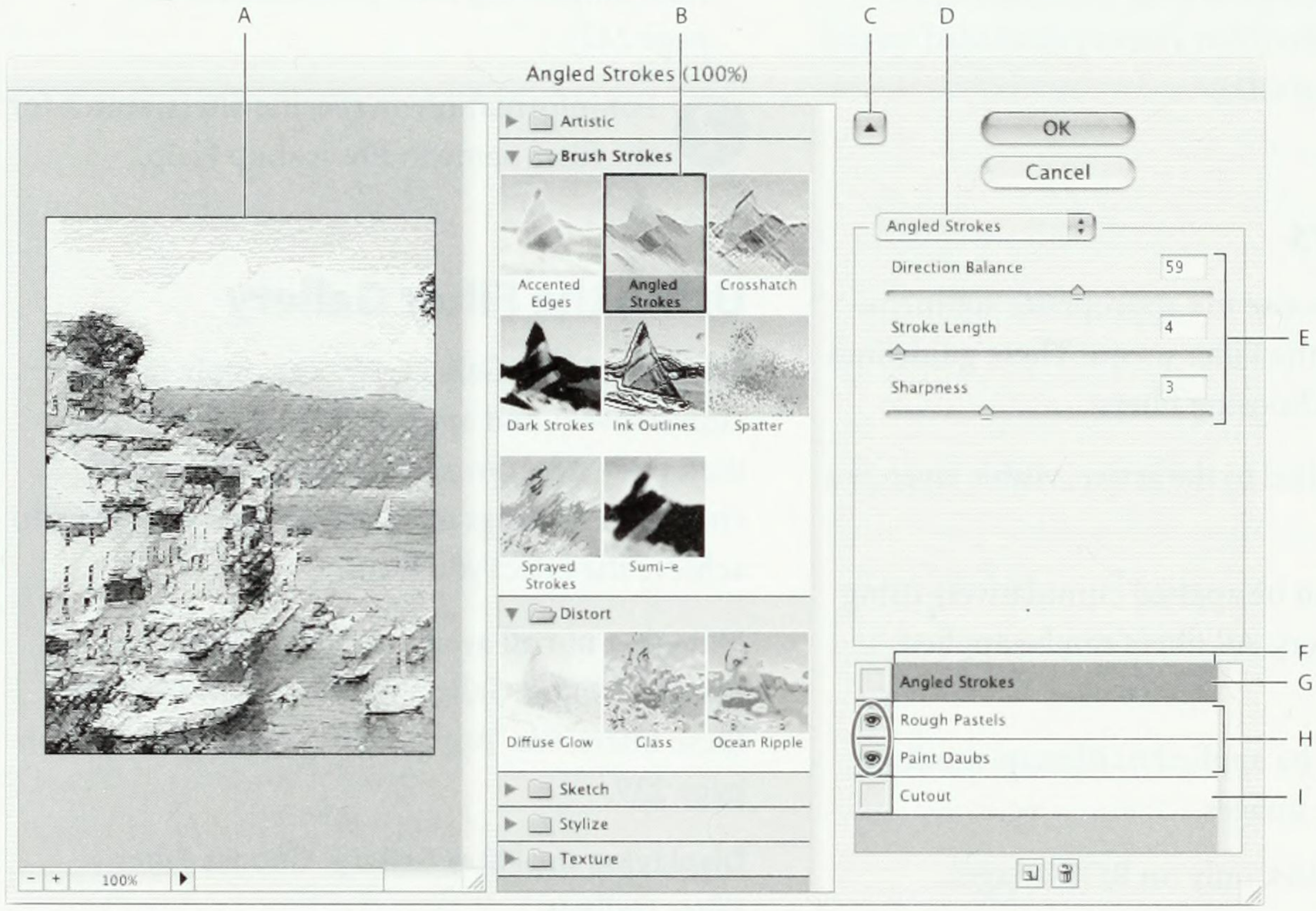
Note that not all available filters can be applied using the Filter Gallery. To learn how to apply these filters, see "Applying filters individually" on page 239.

Displaying the Filter Gallery Choose Filter > Filter Gallery.

Displaying filter thumbnails Click a filter category name to display previews of available filter effects.

Changing the display of the filter preview
You can do any of the following to change the display of the filter preview area:

- Use the + or – button under the preview area to zoom in or zoom out of the image.
- Click the zoom bar (where the zoom percentage appears) to choose a zoom percentage.
- Click the Show/Hide button at the top of the dialog box to hide the filters thumbnails. Hiding the thumbnails expands the preview area.
- Drag in the preview area with the Hand tool to see a different area of the image.



Filter Gallery dialog box
A. *Preview* ***B.*** *Thumbnail of selected filter* ***C.*** *Show/Hide filter thumbnails* ***D.*** *Filters pop-up menu*
E. *Options for selected filter* ***F.*** *List of filter effects to apply or arrange* ***G.*** *Filter effect selected but not applied*
H. *Filter effects applied cumulatively but not selected* ***I.*** *Hidden filter effect*

Applying and arranging filter effects Filter effects are applied in the order you select them. You can rearrange filters once you apply them by dragging a filter name to another position in the list of applied filters. Rearranging filter effects can dramatically change the way your image looks. Click the eye icon next to a filter to hide the effect in the preview image. You can also delete applied filters by selecting the filter and clicking the Delete Effect Layer button.

Applying filters using the Filter Gallery dialog box

Because you can apply more than one filter to an image when you use the Filter Gallery dialog box, you have a lot of control over the way your image is affected by each filter.

To save time when trying various filters, experiment by selecting a small, representative part of your image.

Applying filters using the Filter Gallery
***A.** Original image **B.** Images each with a single filter applied **C.** Three filters applied cumulatively*

To apply filters:

1 Do one of the following:

- To apply a filter to an entire layer, make sure that the layer is active or selected.
- To apply a filter to an area of a layer, select that area.

2 Choose Filter > Filter Gallery.

3 To apply a filter, click the filter's name. You may need to click the inverted triangle next to the filter's category to see a list of the filters.

4 Enter values or select options for the filter you've selected.

5 Do any of the following:

- Choose additional filters to apply.
- Rearrange applied filters.
- Remove applied filters.

6 When you're satisfied, click the OK button.

Applying filters individually

Applying filters—especially to large images—can be time-consuming. Some filters let you preview the effect before applying it. You can then choose to apply the filter or cancel the operation without wasting time.

If the dialog box contains a preview window, use the following methods to preview the effect:

- If the dialog box contains sliders, hold down Alt (Windows) or Option (Mac OS) while dragging a slider to see a real-time preview (real-time rendering) of the effect.

- Drag in the preview window to center a specific area of the image in the window.
- Use the + or – button under the preview window to zoom in or zoom out on the preview
- Click in the image window to center a specific area of the image in the preview window. (This may not work with all preview windows.)

Some individual filters use dialog boxes to help you customize the filter effect. These filter names are followed by ellipses (...) so you can identify them.

To apply a filter:

1 Do one of the following:

- To apply a filter to an entire layer, make sure that the layer is active or selected.
- To apply a filter to an area of a layer, select that area.

2 Choose a filter from the submenus in the Filter menu.

If no dialog box appears, the filter effect is applied.

3 If a dialog box appears, enter values or select options, and then click the OK button.

Blending filter effects (Photoshop)

The Fade command changes the opacity and blending mode of any filter, painting tool, erasing tool, or color adjustment. The Fade command blending modes are a subset of those in the painting and editing tools options (excluding the Behind and Clear modes).

Applying the Fade command is similar to applying the filter effect on a separate layer and then using the layer opacity and blending mode controls. (See "Using adjustment layers and fill layers (Photoshop)" on page 223.)

Note: *The Fade command can also modify the effects of using the Extract command, Liquify command, and Brush Strokes filters.*

To fade the effect of a filter, painting tool, or color adjustment:

1 Apply a filter, painting tool, or color adjustment to an image or selection.

2 Choose Edit > Fade. Select the Preview option to preview the effect.

3 Drag the slider to adjust the opacity, from 0% (transparent) to 100%.

For information on specifying opacity, see Photoshop Help.

4 Choose a blending mode from the Mode menu (see "Selecting a blending mode" on page 171).

5 Click OK.

Note: *The Color Dodge, Color Burn, Lighten, Darken, Difference, and Exclusion blending modes do not work on Lab images.*

Defining undistorted areas

The Displace, Shear, and Wave filters in the Distort submenu and the Offset filter in the Other submenu let you treat areas undefined (or unprotected) by the filter in the following ways:

- Wrap Around fills the undefined space with content from the opposite edge of the image.
- Repeat Edge Pixels extends the colors of pixels along the image's edge in the direction specified. Banding may result if the edge pixels are different colors.
- Set to Background (Offset filter only) fills the selected area with the current background color.

Using texture and glass surface controls

The Conté Crayon, Glass, Rough Pastels, Texturizer, and Underpainting filters have texturizing options. These options make images appear as if they were painted onto textures such as canvas and brick or viewed through glass blocks.

To use texture and glass surface controls:

1 From the Filter menu, choose Artistic > Rough Pastels, Artistic > Underpainting, Distort > Glass, Sketch > Conté Crayon, or Texture > Texturizer.

2 For Texture, choose a texture type or choose Load Texture to specify a Photoshop file.

3 Drag the Scaling slider to enlarge or reduce the effect on the image surface.

4 Drag the Relief slider (if available) to adjust the depth of the texture's surface.

5 Select Invert to reverse the surface's light and dark colors.

6 For Light Direction, indicate the direction of the light source on the image.

Tips for creating special effects

Try the following techniques to create special effects with filters.

Create edge effects You can use various techniques to treat the edges of an effect applied to only part of an image. To leave a distinct edge, simply apply the filter. For a soft edge, feather the edge, and then apply the filter. For a transparent effect, apply the filter, and then use the Fade command to adjust the selection's blending mode and opacity. (See "Blending filter effects (Photoshop)" on page 240.)

Apply filters to layers You can apply filters to individual layers or to several layers in succession to build up an effect. For a filter to affect a layer, the layer must be visible and must contain pixels—for example, a neutral fill color. (See "Filling new layers with a neutral color" on page 208.)

Apply filters to individual channels You can apply a filter to an individual channel, apply a different effect to each color channel, or apply the same filter but with different settings.

Create backgrounds By applying effects to solid-color or grayscale shapes, you can generate a variety of backgrounds and textures. You might then blur these textures. Although some filters have little or no visible effect when applied to solid colors (for example, Glass), others produce interesting effects.

Combine multiple effects with masks or with duplicate images Using masks to create selection areas gives you more control over transitions from one effect to another. For example, you can filter the selection created with a mask.

You can also use the History Brush tool to paint a filter effect onto part of the image. First, apply the filter to an entire image. Next, step back in the History palette to the image state before the filter was applied, and set the history brush source to the filtered state. Then, paint the image. (See "About the History palette" on page 26.)

Improve image quality and consistency You can disguise faults, alter or enhance images, or make a series of images look related by applying the same effect to each. Use the Actions palette to record the process of modifying one image, and then use this action on the other images.

To learn more about using the Actions palette, see Photoshop Help.

Improving filter performance

Some filter effects can be memory-intensive, especially when applied to a high-resolution image. You can use these techniques to improve performance:

- Try out filters and settings on a small portion of an image.
- Apply the effect to individual channels—for example, to each RGB channel—if the image is large and you're having problems with insufficient memory. (With some filters, effects vary if applied to the individual channel rather than the composite channel, especially if the filter randomly modifies pixels.)
- Free up memory before running the filter by using the Purge command. (See "Correcting mistakes" on page 25.)
- Allocate more RAM to Photoshop. If necessary, exit other applications to make more memory available to Photoshop.
- Try changing settings to improve the speed of memory-intensive filters, such as Lighting Effects, Cutout, Stained Glass, Chrome, Ripple, Spatter, Sprayed Strokes, and Glass filters. (For example, with the Stained Glass filter, increase cell size. With the Cutout filter, increase Edge Simplicity, decrease Edge Fidelity, or both.)
- If you plan to print to a grayscale printer, convert a copy of the image to grayscale before applying filters. However, applying a filter to a color image and then converting to grayscale may not have the same effect as applying the filter to a grayscale version of the image.

Chapter 12: Designing Web Pages

Adobe Photoshop and Adobe ImageReady provide you with a comprehensive environment for designing complex, image-rich Web pages.

About designing Web pages with Photoshop and ImageReady

When designing Web pages using Photoshop and ImageReady, keep in mind the tools and features that are available in each application.

- Photoshop provides tools for creating and manipulating static images for use on the Web. You can divide an image into slices, add links and HTML text, optimize the slices, and save the image as a Web page.
- ImageReady is designed for professional Web page layout. You can more easily work with layers as if they were independent objects: selecting, grouping, aligning, and arranging them. In addition, ImageReady includes tools and palettes for advanced Web processing and creating dynamic Web images like animations and rollovers.

The graphics tools and features in Photoshop and ImageReady simplify most Web design tasks:

Page design In ImageReady, preset document sizes for pages and banners, grids, guidelines, and smart guides simplify page layout. Both Photoshop and ImageReady let you add content to layouts using the text, drawing, and painting tools. In ImageReady, you can arrange and align content using layers, layer sets, and grouped layers. To experiment with different page compositions or to export variations of a page, use the Layer Comps palette. See "About layer comps and the Layer Comps palette" on page 227.

Slices When your page composition is ready for output to the Web, both Photoshop and ImageReady provide the Slice tool to let you divide page layouts or complex graphics into areas and specify independent compression settings (and smaller file sizes). (See "Creating and viewing slices" on page 244.)

Rollovers The Web Content palette in ImageReady enables you to track slices and their rollover states. For example, you can create a button for a Web page that glows whenever the user moves the pointer over it, and you can manage the button states and activities in those states. (See "About slices" on page 244.)

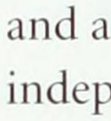
Animations For creating simple Web animations, ImageReady provides the Animation palette, giving you the ability to determine, frame by frame, the appearance of an animation that can be exported as an animated GIF or SWF file. You can create animation in conjunction with sets of slices, nested tables, percentage width tables, and *remote rollovers*, where you mouse over one image and a different image changes.

Export and image optimization When your page or graphic is ready for final export, the Save For Web dialog in Photoshop and the Optimization palette in ImageReady enables you to precisely determine how the page or graphic should be exported. Additionally, you can export an HTML file with the actual images. This text file instructs a browser how to properly display exported images and rollover effects. (See "Setting HTML output options" on page 260.)

Note: *You can preview most Web effects directly in Photoshop or ImageReady. However, the appearance of an image on the Web depends on the operating system, color display system, and browser used to display the image. Be sure to preview images and pages in different browsers, on different operating systems, and with different color bit depths. (See "Previewing an image in a browser" on page 42.) Remote rollovers are best previewed in a browser.*

Preparation in Adobe GoLive Additionally, Photoshop and ImageReady files can be opened directly in Adobe GoLive. Slices, URLs, and other Web features in Photoshop files are accessible in GoLive for management and editing. For more information on using GoLive, see the *Adobe GoLive User Guide*.

Automating the workflow Photoshop and ImageReady have a robust system that enables you to automate repetitive tasks. For example, ImageReady droplets allow designers to quickly convert a batch of images into a Web-ready format.



For information on automating tasks, see Photoshop Help.

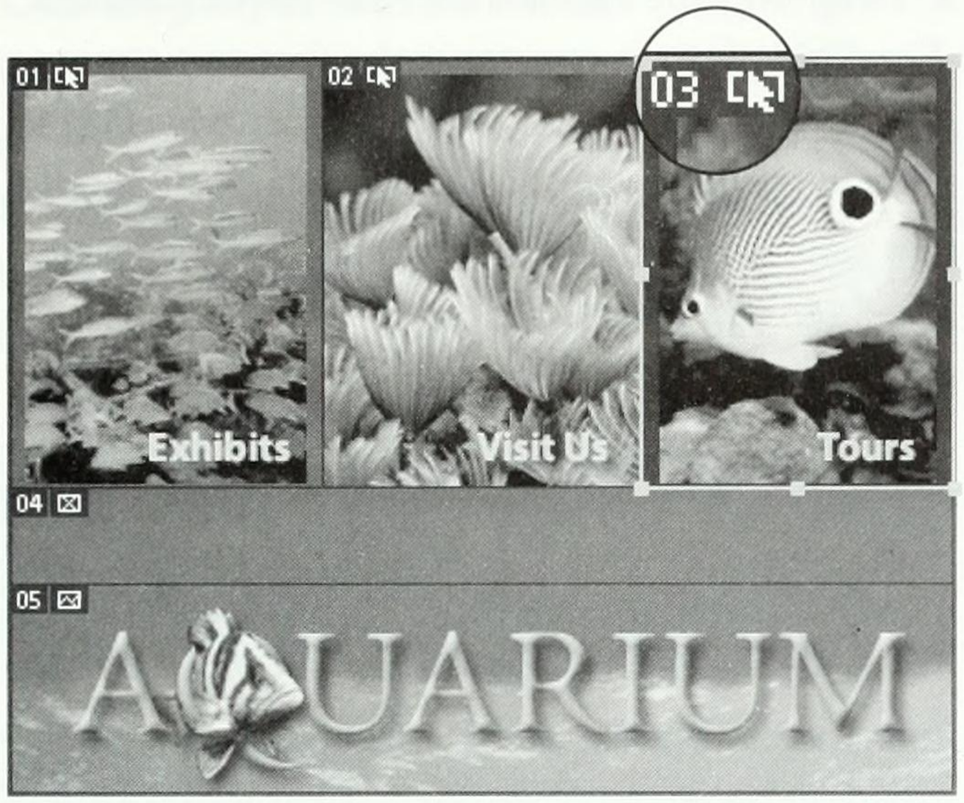
Creating and viewing slices

A slice is a rectangular area of an image that you can use to create links, rollovers, and animations in the resulting Web page. Dividing an image into slices allows you both finer functional control and better file size optimization of your image.

About slices

You use slices to divide a source image into functional areas. When you save both the image and an HTML file, each slice is saved as an independent file with its own settings and color palette, and the proper links, rollover effects, and animation effects are preserved.

Slices are also advantageous when working with images that contain different types of data. For example, if one area of an image needs to be optimized in GIF format to support an animation, but the rest of the image is better optimized in JPEG format, you can isolate the animation using a slice.



Web page divided into slices with a highlighted rollover slice

To work with slices:

- Create a slice. (See "Creating and viewing slices" on page 244 and "Creating layer-based slices" on page 247.) After you create a slice, you can select it using the Slice Select tool and then move or resize it.
- Set options for each slice—such as content type, name, and URL—in the Slice Options dialog box (Photoshop) or the Slice palette (ImageReady). (See "Setting HTML output options" on page 260).
- Align slices in ImageReady. You can also set values in the Output Settings dialog box that will generate HTML code to align your slices. These values use tables or cascading style sheets.

For more information on setting output options, see Photoshop Help.

Types of slices

Slices are categorized by their content type (auto, image, no-image, table) and by the way they are created (user, layer-based). For information on slice content types, see "Choosing a content type" on page 261.

Slices you create using the Slice tool are called *user slices*; slices you create based on the content of a layer are called *layer-based slices*. When you create a new user slice or layer-based slice, additional *auto slices* are generated to account for the remaining areas of the image. In other words, auto slices fill the space in the image that is not defined by user slices or layer-based slices. Auto slices are regenerated every time you add or edit user slices or layer-based slices. You can convert auto slices to user slices. *Table slices* contain nested tables.

User slices, layer-based slices, and auto slices look different—user slices and layer-based slices are defined by a solid line, while auto slices are defined by a dotted line. In addition, each type of slice displays a distinct icon. You can choose to show or hide auto slices, which can make your work with user- and layer-based slices easier to view.

A *subslice* is a type of auto slice that is generated when you create overlapping slices. Subslices indicate how the image will be divided when you save the optimized file. Although subslices are numbered and display a slice symbol, you cannot select or edit them separately from the underlying slice. Subslices are regenerated every time you arrange the stacking order of slices.

Slices are created using different methods:

- Auto slices are automatically generated by ImageReady.
- User slices are created with the Slice tool. (See "Creating user slices" on page 246.)
- Layer-based slices are created with the Layers palette. (See "Creating layer-based slices" on page 247.)
- Table slices are created with the Web Content palette. (See "Creating tables" on page 258.)

Creating user slices

You can create user slices with the Slice tool or from guides.

To create a slice with the Slice tool:

1 Select the Slice tool . Any existing slices automatically display in the document window.

2 Choose a style setting in the options bar:

- Normal to determine slice proportions by dragging.
- Fixed Aspect Ratio to set a height-to-width ratio. Enter whole numbers or decimals for the aspect ratio. For example, to create a slice twice as wide as it is high, enter 2 for the width and 1 for the height.
- Fixed Size to specify the slice's height and width. Enter pixel values in whole numbers.

3 Drag over the area where you want to create a slice. Shift-drag to constrain the slice to a square. Alt-drag (Windows) or Option-drag (Mac OS) to draw from the center. Use View > Snap To align a new slice to a guide or another slice in the image. (See "Moving and resizing user slices" on page 252.)

To create slices from guides:

1 Add guides to an image. (See "Using guides and the grid" on page 34.)

2 Do one of the following:

- (Photoshop) Select the Slice tool, and click Slices From Guides in the options bar.
- (ImageReady) Choose Slices > Create Slices from Guides.

When you create slices from guides, any existing slices are deleted.

To create a slice from a selection (ImageReady):

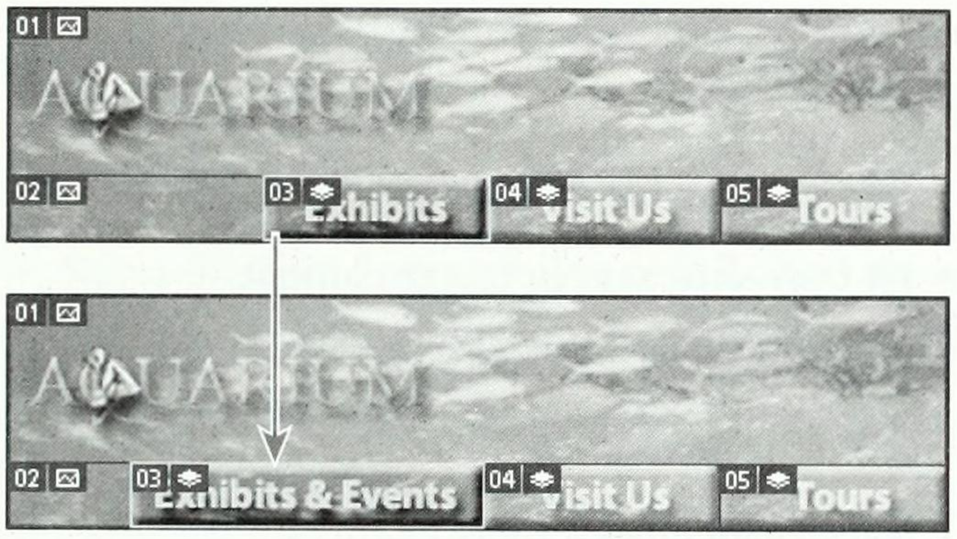
1 Select a portion of the image.

2 Choose Select > Create Slice from Selection.

ImageReady creates a user slice based on the selection marquee. If the selection is feathered, the slice covers the full selection (including the feathered edges). If the selection is nonrectangular, the slice covers a rectangular area large enough to enclose the full selection.

Creating layer-based slices

When you create a slice from a layer, the slice area encompasses all the pixel data in the layer. If you move the layer or edit the layer's content, the slice area automatically adjusts to encompass the new pixels.



A layer-based slice is updated when the source layer is modified.

Layer-based slices are especially useful when working with rollovers. If you apply an effect to the layer—such as a drop shadow or glow—to create a rollover state, the slice automatically adjusts to encompass the new pixels. However, do not use a layer-based slice when you plan to move the layer over a large area of the image during an animation, because the slice dimension may exceed a useful size.

To create a slice from a layer:

1 Select a layer in the Layers palette.

2 Choose Layer > New Layer Based Slice.

Converting auto slices to user slices

You can move, duplicate, combine, divide, resize, delete, arrange, align, and distribute user slices. You can also apply different optimization settings to user slices. In contrast, all auto slices in an image are linked and share the same optimization settings. This is because auto slices are regenerated every time you create or edit a user slice or layer-based slice.

If you select an auto slice and link it to a user slice, the user slice will take on the optimization settings from the auto slice. If you select the user slice first, however, the auto slice is *promoted* to a user slice. Unlinking promotes auto slices to user slice status. (See "Linking slices (ImageReady)" on page 257.)

To convert an auto slice to a user slice:

1 Select an auto slice. In ImageReady, you can select multiple slices. (See "Selecting slices" on page 250.)

2 Do one of the following:

- (Photoshop) With the Slice Select tool selected, click Promote to User Slice in the options bar.
- (ImageReady) Choose Slices > Promote to User-slices.

Converting layer-based slices to user slices

Because a layer-based slice is tied to the pixel content of a layer, the only way to move, combine, divide, resize, and align it is to edit the layer. You can convert a layer-based slice to a user slice to unlink it from the layer.

To convert a layer-based slice to a user slice:

1 Select a layer-based slice. In ImageReady, you can select multiple slices. (See "Selecting slices" on page 250.)

2 Do one of the following:

- (Photoshop) Click Promote to User Slice in the options bar.
- (ImageReady) Choose Slices > Promote to User-slices.

Viewing slices

You can view slices in Photoshop, the Photoshop Save for Web dialog box, and ImageReady. The following characteristics can help you identify and differentiate between slices:

Slice lines Define the boundary of the slice. Solid lines indicate that the slice is a user slice or layer-based slice; dotted lines indicate that the slice is an auto slice.

Slice colors Differentiate user slices and layer-based slices from auto slices. By default, user slices and layer-based slices have blue symbols, while auto slices have gray symbols.

In addition, ImageReady and the Photoshop Save for Web dialog box use color adjustments to dim unselected slices. These adjustments are for display purposes only and do not affect the final image's color. By default, the color adjustment for auto slices is twice the amount of that for user-slices.

Slice numbers Slices are numbered 01 from left to right and top to bottom, beginning in the upper left corner of the image. If you change the arrangement or total number of slices, slice numbers are updated to reflect the new order.

Slice badges The Web Content palette uses a number of *badges*, or icons, to indicate certain conditions, and these icons also appear in the document itself:

- User slice has Image content
- User slice has No Image content
- Slice is a layer-based slice
- Slice is linked
- Slice includes a rollover effect
- Slice contains the active rollover state
- Slice is a nested table
- Slice is a remote trigger
- Slice is a remote target

To show or hide slice badges (ImageReady):

1 In the Web Content palette, open the palette menu and choose palette options.

2 Check the Show Slice Badges box.

To show or hide slice boundaries:

Do one of the following:

- Choose View > Show > Slices. To hide and show slices along with other items, use the Extras command. For more information, see "Working with Extras" on page 36.

- (ImageReady) Click the Visibility icon, located to the left of the slice in the Web Content palette.

Note: *If you've turned off a slice's visibility with the Slices Visibility icon, ImageReady doesn't output that slice when you choose Save Optimized. This is similar to layer visibility functionality.*

To show or hide auto slices:

Do one of the following:

- Select the Slice Select tool, and click Show Auto Slices or Hide Auto Slices in the options bar.
- Choose View > Show > Slices. Auto slices appear with the rest of your slices.
- (ImageReady) Choose View > Show > Auto Slices.

To show or hide slice numbers (Photoshop):

1 Do one of the following:

- In Windows, choose Edit > Preferences > Guides, Grid, & Slices.
- In Mac OS, choose Photoshop > Preferences > Guides, Grid, & Slices.

2 Under Slices, click Show Slice Numbers.

To show or hide slice numbers and slice symbols (ImageReady):

1 Do one of the following:

- In Windows, choose Edit > Preferences > Slices.
- In Mac OS, choose ImageReady > Preferences > Slices.

2 Under Numbers and Symbols, select a size for display symbols:

- None to display no numbers or symbols
- The small icon to display small numbers and symbols
- The large icon to display large numbers and symbols

3 For Opacity, enter a value, or choose a value from the pop-up slider to change the opacity (transparency level) of the numbers and symbols display.

To show slice lines only (ImageReady):

1 Do one of the following:

- In Windows, choose Edit > Preferences > Slices.
- In Mac OS, choose ImageReady > Preferences > Slices.

2 Under Slice Lines, select Show Lines Only.

To change the color of slice lines:

1 Do one of the following:

- (Photoshop) In Windows, choose Edit > Preferences > Guides, Grid, & Slices; in Mac OS, choose Photoshop > Preferences > Guides, Grid, & Slices.
- (ImageReady) In Windows, choose Edit > Preferences > Slices; in Mac OS, choose ImageReady > Preferences > Slices.

2 Under Slice Lines, choose a color from the Line Color pop-up menu.

Changing the color of slice lines automatically changes the color of selected slice lines to a contrasting color.

To change slice color adjustments (ImageReady):

1 Do one of the following:

- In Windows, choose Edit > Preferences > Slices.
- In Mac OS, choose ImageReady > Preferences > Slices.

2 Enter a value, or choose a value from the Color Adjustments pop-up slider for User slices, Auto slices, or both. (The User slices option controls color adjustments for both user slices and layer-based slices.)

The value determines by how much the brightness and contrast of unselected slices are dimmed.

Selecting and modifying slices

You can move, duplicate, combine, divide, resize, delete, arrange, align, and distribute user slices. There are fewer options for modifying layer-based slices and auto slices; however, you can promote a layer-based slice or an auto slice to a user slice at any time.

In Photoshop, you cannot combine, align, or distribute slices. Edit your document in ImageReady to access these slice-editing capabilities.

Selecting slices

You select a slice or multiple slices with the Slice Select tool. You can then modify the selected slices.

In ImageReady, you can save, load, and delete slice selections. Using slice selections lets you reselect specific slices quickly and accurately.

To select a slice:

Do one of the following:

- Select the Slice Select tool and click the slice in the image.When working with overlapping slices, click the visible section of an underlying slice to select it.
- (Photoshop) Choose File > Save For Web. In the dialog box, use the Slice tool to select a slice.

When using either the Slice tool or the Slice Select tool, toggle between them by holding down Ctrl (Windows) or Command (Mac OS).

- (ImageReady) Select a slice in the Web Content palette.

To select multiple slices (ImageReady):

With the Slice Select tool , do one of the following:

- Shift-click to add slices to the selection.
- Click in an auto slice or outside the image area, and drag across the slices you want to select. (Clicking in a user slice and dragging moves the slice.)
- In the Web Content palette, shift-click multiple slices.

To select all the user slices in a document (ImageReady):

Choose Slices > Select All User Slices. This actually selects all nonauto slices, and includes layer-based slices in the selection.

To save a slice selection (ImageReady):

1 Select one or more slices.

2 Choose Slices > Save Slice Selection.

3 Enter a name in the Selection Name text box, and click OK.

To load a slice selection (ImageReady):

Choose Slices > Load Slice Selection, and select the name of the slice selection you want to load from the submenu.

Note: *You must save a slice selection before you can load it.*

To delete a slice selection (ImageReady):

Choose Slices > Delete Slice Selection, and select the name of the slice selection you want to delete from the submenu. Deleting a slice selection does not delete the slices themselves.

Using slice sets (ImageReady)

In ImageReady, you can combine slices into sets, and toggle the visibility of those sets. This lets you create different configurations for your Web page, which is especially powerful when you combine this feature with layer comps. You can create unique slice sets to match your various layer comps. See "Working with layer comps" on page 226.

Note: *You can only place a slice in one slice set at a time.*

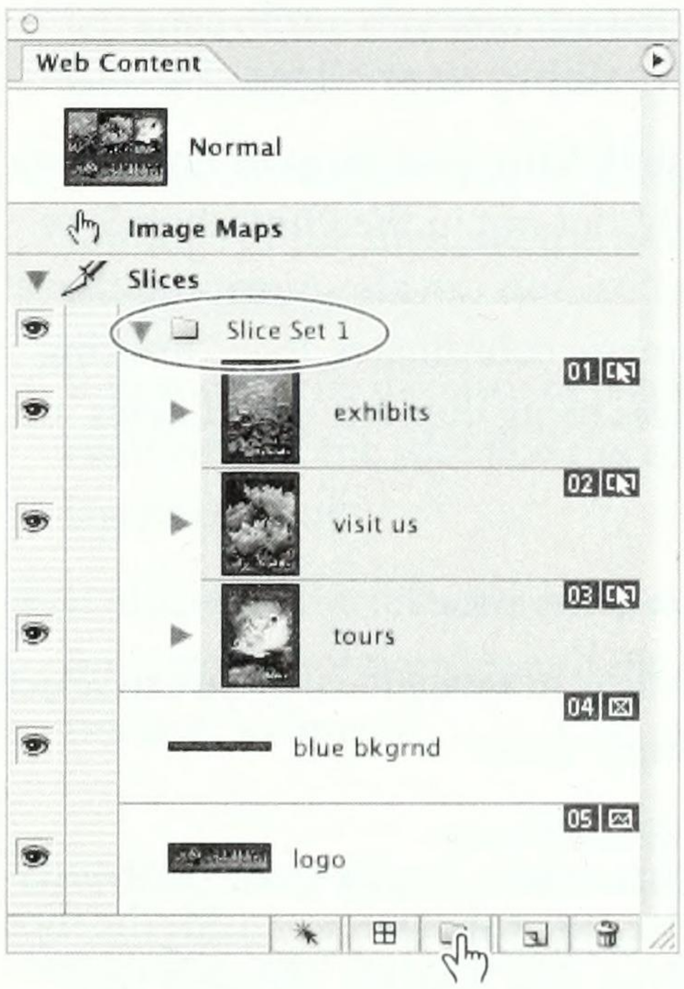
You work with slice sets in the Web Content palette.

To create a slice set:

1 Select one or more slices.

2 Do one of the following:

- Choose Slices > New Slice Set.
- Click the New Slice Set button in the Web Content palette.



ImageReady Web Content palette with slice set

To toggle the visibility of a slice set:

In the Web Content palette, click the Visibility icon to show or hide slice sets.

To delete a slice set:

1 In the Web Content palette, select the slice set you want to delete.

Note: *If the slice set is not visible in the palette, expand the Slices section of the palette by clicking the arrow next to the Slices section header.*

2 Click the Delete Slice button to remove the slice set.

3 Choose one of the following:

- Set Only deletes just the set itself.
- Set and Contents deletes the set and all its slices.

Moving and resizing user slices

You can move and resize user slices in Photoshop and ImageReady, but not in the Photoshop Save for Web dialog box. You can also move and resize slices using numeric coordinates. (See "Resizing and moving slices using numeric coordinates" on page 252.)

To move or resize a user slice:

1 Select a user slice. In ImageReady, you can select and move multiple slices.

2 Do one of the following:

- To move a slice, move the pointer inside the slice selection border, and drag the slice to a new position. Press Shift to restrict movement to a vertical, horizontal, or 45° diagonal line.
- To resize a slice, grab a side or a corner handle of the slice, and drag to resize the slice. If you select and resize adjacent slices, common edges shared by the slices are resized together.

To snap slices to a guide, user slice, or other object:

1 Select the options you want from the View > Snap To submenu, and choose to snap to grid, guides, layers, slices (ImageReady), image maps, document bounds (ImageReady), all, or none.

2 Choose View > Snap. (See "Using the Snap command" on page 124.) A check mark indicates that the option is turned on.

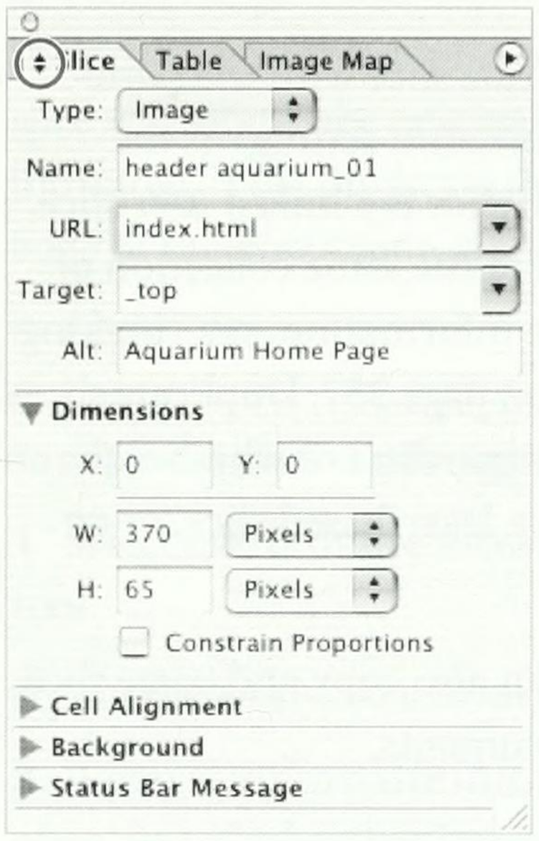
3 Move your selected slices as desired. The slices snap to any of your chosen objects within 4 pixels.

Note: *For more information on moving objects with smart guides, see "Using guides and the grid" on page 34.*

Resizing and moving slices using numeric coordinates

You can set the exact position and dimensions for a user slice using the Dimensions options of the Slice palette. In ImageReady, you can also set the exact position and dimensions for a layer-based slice using the Layer Based Dimensions Pad options.

In ImageReady, if the Dimensions or Layer Based Dimensions Pad options aren't showing, choose Show Options from the Slice palette menu, or click the Show Options button on the palette tab to view them, and click the triangle to the left of the options you want displayed (such as the Layer Based Dimensions).



ImageReady Slice palette with Dimension options displayed

To resize or move a user slice using numeric coordinates (Photoshop):

1 Double-click the slice in the image with the Slice Select tool, and choose Slice Options from the menu bar.

2 In the Dimensions area of the Slice Options dialog box (Photoshop) or the Slice palette (ImageReady), change one or more of the following options:

- X to specify the distance in pixels between the left edge of the slice and the origin point of the ruler in the document window
- Y to specify the distance in pixels between the top edge of the slice and the origin point of the ruler in the document window

Note: *The default origin point of the ruler is the upper left corner of the image. (See "Using guides and the grid" on page 34.)*

- W to specify the width of the slice
- H to specify the height of the slice
- Constrain Proportions to preserve the current proportions of the slice

To resize a layer-based slice using numeric dimensions (ImageReady):

1 Select a layer-based slice.

2 In the Slice palette, in the Layer Based Dimensions options area, change one or more of the following Pad options:

- L to specify the distance in pixels between the left edge of the slice and the left edge of the layer's content
- T to specify the distance in pixels between the top edge of the slice and the top edge of the layer's content
- R to specify the distance in pixels between the right edge of the slice and the right edge of the layer's content
- B to specify the distance in pixels between the bottom edge of the slice and the bottom edge of the layer's content

Dividing user slices and auto slices

The Divide Slice dialog box lets you divide slices horizontally, vertically, or both. In Photoshop, you can divide only one slice; in ImageReady, you can divide multiple slices at the same time. Divided slices are always user slices, regardless of whether the original is a user slice or an auto slice.

Note: *You cannot divide layer-based or nested table slices.*

To divide slices:

1 Select a slice. In ImageReady, you can select multiple slices.

2 Do one of the following:

- (Photoshop) With the Slice Select tool selected, click Divide Slice in the options bar.
- (ImageReady) Choose Slices > Divide Slice.
- (ImageReady) Choose Divide Slice from the Slice palette menu.

3 Select Preview in the Divide Slice dialog box to preview the changes.

4 In the Divide Slice dialog box, select one or both of the following options:

- Divide Horizontally Into to divide the slice lengthwise.
- Divide Vertically Into to divide the slice widthwise.

5 Define how you want to divide each selected slice:

- Select and enter a value for slices down or slices across to divide each slice evenly into the specified number of slices.
- Select and enter a value for pixels per slice to divide each slice based on the specified number of pixels. Any section of a slice that is left over is made into another slice. For example, if you divide a slice that is 100 pixels wide into three new slices each 30 pixels wide, the remaining 10-pixel-wide area becomes a new slice.

6 Click OK.

Duplicating slices

You can create a duplicate slice with the same dimensions and optimization settings as the original. If the original slice is a linked user slice, the duplicate is linked to the same collection of linked slices. For more information, see "Linking slices (ImageReady)" on page 257. Duplicate slices are always user slices, regardless of whether the original is a user slice, a layer-based slice, or an auto slice.

In ImageReady, you can also copy and paste slices within or between documents.

To duplicate a slice:

1 Select a slice. (In ImageReady, you can select multiple slices.)

2 Alt-drag (Windows) or Option-drag (Mac OS) from inside the selection.

To duplicate a slice using the Web Content palette (ImageReady)

1 Select a slice in the Web Content palette.

2 Choose Slices > Duplicate Slice or Duplicate Slice from the palette menu. (See "Using the Web Content palette" on page 271.)

3 In the Duplicate Slice dialog box, select from the following options:

- Duplicate Rollover States to maintain any rollover states associated with the original slice
- Duplicate Layers for Layer-Based Slices to duplicate a layer associated with a layer-based slice

4 From the position menu, choose an option for the position of the duplicate slice. The duplicate slice will adjoin the original slice in the position indicated. If the duplicate slice extends beyond the edge of the document, it will be truncated.

5 Click OK.

To copy and paste a slice (ImageReady):

1 Select one or more slices with the Slice Select tool.

2 Choose Copy Slice from the Edit menu.

3 If you want to paste into another image, open and display that image.

4 Choose Paste Slice from the Edit menu. If you paste the slice into the same image as you copied it from, the pasted slice appears on top of the original.

The Copy Slice and Paste Slice commands have the same keyboard shortcuts as the regular Copy and Paste commands.

Combining slices (ImageReady)

In ImageReady, you can combine two or more slices into a single slice. The resulting slice takes its dimensions and position from the rectangle created by joining the outer edges of the combined slices. If the combined slices are not adjacent or are of different proportions or alignments, the newly combined slice may overlap other slices.

Optimization settings for the combined slice are those of the first slice selected before the Combine Slices operation. A combined slice is always a user slice, regardless of whether the original slices include auto slices.

Note: *You cannot combine layer-based slices.*

To combine slices:

1 Select two or more slices.

2 Choose Slices > Combine Slices.

Arranging user slices and layer-based slices

When slices overlap, the last slice you create is the top slice in the stacking order. You can change the stacking order to gain access to underlying slices. You can specify which slice is on the top and bottom of the stack and move slices up or down in the stacking order.

Note: *You cannot arrange the stacking order of auto slices.*

To change the stacking order of slices:

1 Select a slice. In ImageReady, you can select multiple slices.

2 Do one of the following:

- With the Slice Select tool active, click a stacking order option in the options bar: Bring to Front, Bring Forward, Send Backward, or Send to Back.
- (ImageReady) Choose Edit > Arrange Slices and choose a stacking order command from the submenu.
- (ImageReady) Drag the slice up or down in the Web Content palette. See "Using the Web Content palette" on page 271.

Aligning user slices (ImageReady)

In ImageReady, you can align user slices with the top, bottom, left, right, or middle. Aligning user slices can eliminate unneeded auto slices and generate a smaller, more efficient HTML file.

Note: *To align layer-based slices, align the contents of the layers. (See "Aligning layers" on page 200.)*

To align user slices:

1 Select the user slices you want to align.

2 Do one of the following:

- With the Slice Select tool active, click an alignment option in the options bar: Align Top Edges, Align Vertical Centers, Align Bottom Edges, Align Left Edges, Align Horizontal Centers, or Align Right Edges.
- Choose Edit > Align Slices, and choose a command from the submenu.

Distributing user slices (ImageReady)

In ImageReady, you can distribute user slices evenly along the vertical or horizontal axis. Distributing user slices can eliminate unneeded auto slices and generate a smaller, more efficient HTML file.

Note: *To distribute layer-based slices, distribute the contents of the layers. (See "Aligning layers" on page 200.)*

To distribute user slices:

1 Select three or more user slices you want to distribute.

2 Do one of the following:

- With the Slice Select tool active, click a distribution option in the options bar: Distribute Top Edges, Distribute Vertical Centers, Distribute Bottom Edges, Distribute Left Edges, Distribute Horizontal Centers, or Distribute Right Edges.
- Choose Edit > Distribute Slices, and choose a command from the submenu.

Deleting user slices and layer-based slices

When you delete a user slice or layer-based slice, auto slices are regenerated to fill the document area.

Deleting a layer-based slice does not delete the associated layer; however, deleting the layer associated with a layer-based slice does delete the layer-based slice.

Note: *You cannot delete auto slices. If you delete all user slices and layer-based slices in an image, one auto slice layer will remain.*

To delete a slice:

1 Select a slice. In ImageReady, you can select multiple slices.

2 Do one of the following:

- Choose the Slice or Slice Select tool and press the Backspace key or the Delete key.
- (ImageReady) Choose Slices > Delete Slices, or choose Delete Slices from the Slice palette menu.

- (ImageReady) Choose Delete Slice from the Web Content palette menu or click the Delete Slice button in the Web Content palette.

To delete all user slices and layer-based slices:

Do one of the following:

- (Photoshop) Choose View > Clear Slices.
- (ImageReady) Choose Slices > Delete All.

Locking slices (Photoshop)

Locking slices prevents you from making changes accidentally, such as resizing or moving slices.

To lock all slices:

Choose View > Lock Slice.

Optimizing slices

You can optimize image slices using the Save for Web dialog box (Photoshop) or the Optimize palette (ImageReady).

All image slices use the optimization settings of the entire image until you apply new settings. If you select multiple slices with different optimization settings, only the controls that are relevant to all of the selected slices are visible. If settings for a control differ among slices, the control is blank. Any settings you choose are applied to all selected slices.

In ImageReady, you can also copy optimization settings from one slice to another within a document, or from a slice in one view to a slice in another view in 2-Up or 4-Up view.

To optimize a slice:

Select one or more image slices. Do one of the following:

- Specify options in the Optimize palette.
- From the Optimize palette pop-up menu, choose Optimize to File Size. Enter a desired file size, and choose Slice to Start With (Current Settings or Auto Select GIF/JPEG), and Slice to Use (Current, Each, or Total of All).

For more information on optimizing images, see Photoshop Help.

To copy optimization settings between slices (ImageReady):

1 Select the slice that uses the optimization settings you want to copy.

2 Drag the Droplet icon from the Optimize palette onto the slice to which you want to apply the optimization settings.

Linking slices (ImageReady)

Linking slices lets you share optimization settings between slices. When you apply optimization settings to a linked slice, all slices in the set are updated.

Linked slices in GIF and PNG-8 format share a color palette and dither pattern. The dither pattern is applied across adjacent slice boundaries to prevent the appearance of seams between the slices.

For more information on optimizing colors, see Photoshop Help.

Note: *You can also link slices in the Photoshop Save for Web dialog box. (See "Working with slices in the Save for Web dialog box (Photoshop)" on page 285.)*

To link slices:

1 Select two or more slices or slice sets you want to link.

Note: *If the first slice you select is a user slice, any auto slices you link to the first slice become user-slices. If the first slice you select is an auto slice, any user slices you select are linked to the auto slice group.*

2 Choose Slices > Link Slices for Optimization.

Each linked set of user slices is assigned a different color for the slice display graphics in the upper left corner of the slice. This helps to identify which slices are linked.

To unlink user slices:

Do one of the following:

- To unlink a user slice, select the slice, and then choose Slices > Unlink Slices.
- To unlink all of the slices linked to a particular slice, select one of the slices in the Web Content palette, and choose Slices > Unlink Shared Links.
- To unlink all user slices in an image, choose Slices > Unlink All.

Working with tables (ImageReady)

When you convert a document containing slices to HTML, it is output as a single table; each individual slice is placed inside separate table cells. Slices are actually table cells.

Optionally, you can choose to group slices into tables themselves, which are then *nested* inside the main table. You can only nest one level down, however; slices grouped into tables cannot be nested again inside other slice group tables.

A slice of type Table Slice is a slice that contains a table you've created, or a nested table.

You can resize tables to fit layer-based elements. See "Resizing tables" on page 260.

Creating tables

You can select and group slices for output as separate, nested tables when converting a document to HTML.

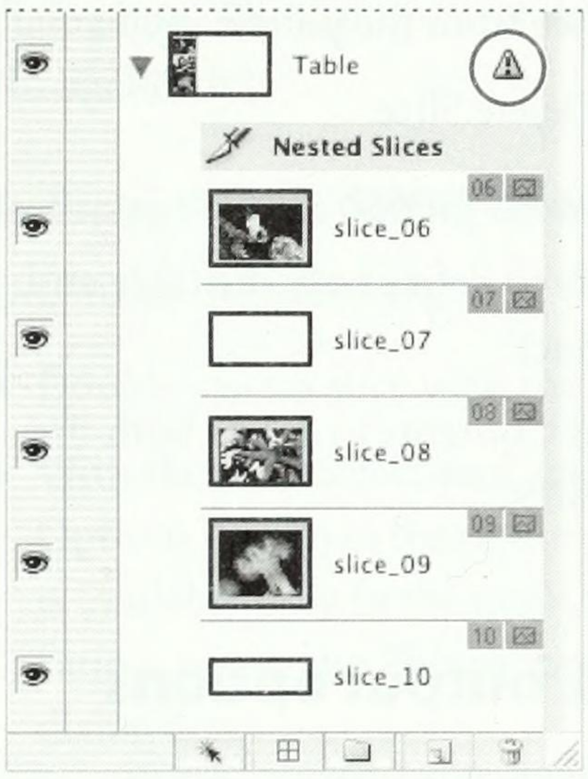
To create a table:

Do one of the following:

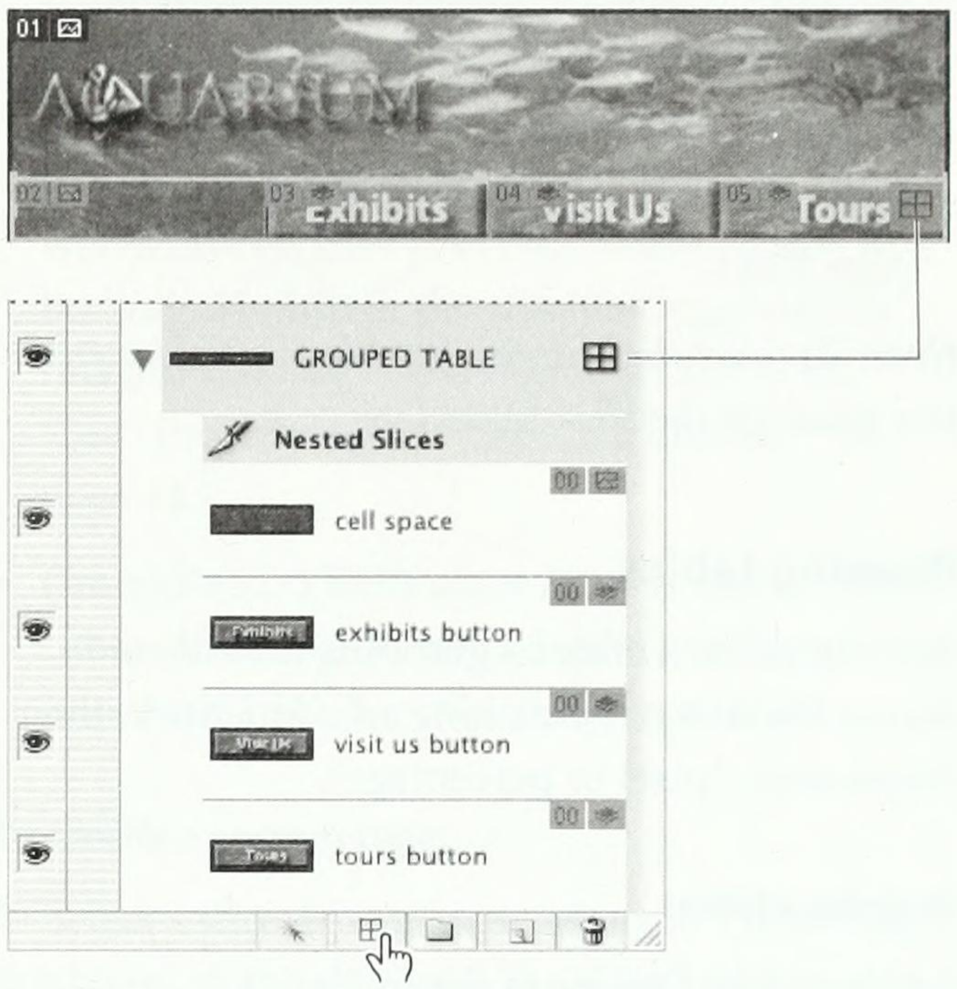
- Select multiple slices (see "Selecting and modifying slices" on page 250) and then click the Group Slice Into Table button in the Web Content palette.
- Select multiple slices (see "Selecting and modifying slices" on page 250) and then choose Slices > Group Slices Into Table.

- Select a slice, and change the slice type from "Image" to "Table" in the Slice palette. Switch to the Table palette to set its attributes. ImageReady automatically creates a user slice to fill the table.

Note: *Certain slice layouts require ImageReady to generate spacer cells (spacer.gif images) to render the image properly in certain browsers. If this happens to your table, a yellow warning icon shows in the table's header in the Web Content palette.*



A table showing spacer cell warning



You can see tables in ImageReady's Web Content palette or in the image in your document.

You can also see your table in the Table palette. It has option areas for the table's Dimensions, Auto Slicing method, and Cell Options.

Note: *In order to edit the table, you need to select the table or one of its slices.*

Viewing tables

In the Web Content palette, slices grouped as nested tables are indicated with the table icon ⊞. This same icon appears in your document window, with the borders of the slice table outlined in color.

Selecting tables

You can select tables via the document window or the Web Content palette.

To select a table:

Do one of the following:

- In a document, select the table icon ⊞ in a slice with the Slice Select tool.

- In the Web Content palette, select the table directly by clicking its name.
- In a document, select a slice with the Slice Select tool. (See "Selecting and modifying slices" on page 250.)

Note: *To select the outermost table in a document, you must use the Slice Select tool.*

Resizing tables

You can resize a table by grabbing the side or corner handles or by making adjustments to their dimensions (pixel or percentage).

To resize a table:

Select a table. Do one of the following:

- In the document window, grab a side or corner handle and drag to resize the table.
- In the Table palette, in the Dimensions options area, enter the dimensions in pixels (the default method). Press Enter (Windows) or Return (Mac OS) to make the change. If you enter a width dimension, the height changes automatically, and vice-versa.
- In the Table palette, in the Dimensions options area, change the Pixels method to Percentage and add a value to any of the dimensions. Press Enter (Windows) or Return (Mac OS) to make the change.
- Choose Slices > Resize Table to Slices. If your table is larger than the slices, this command will shrink the table to fit the slices. If the slice area exceeds that of the table, it will expand the table to reveal all of the child slices.

Deleting nested tables slices

You can delete tables you've nested inside slices with or without deleting the slices that comprise them. In other words, you can ungroup the slices so they are no longer a table.

To delete a nested table:

1 In the Web Content palette, select the nested table slice.

2 Do one of the following:

- Choose Delete Slice from the palette menu
- Choose Slices > Delete Slice.

3 Choose one of the following:

- Choose Table only to delete only the table and keep the slices intact.
- Choose Table and Contents to delete both the table and all its slices.

Setting HTML output options

Photoshop and ImageReady provide precise control over both preparation of images for the Web and the way in which the images are presented on a Web page. Slices and slice table structure can be specified within both applications to ensure proper functionality in an exported HTML or XHTML file. (See "Setting slice table export options (ImageReady)" on page 264.)

Setting and viewing slice options

Setting slice options lets you specify how the slice data will appear in a Web browser when exported with an HTML file. The available options vary according to the application and the slice type you select. You can only set options for one slice at a time.

Note: *Setting options for an auto slice promotes the slice to a user slice.*

You specify slice options in the Slice Options dialog box (Photoshop) and the Slice palette (ImageReady).

To display the Slice Options dialog box (Photoshop):

Do one of the following:

- Double-click a slice with the Slice Select tool.
- With the Slice Select tool active, click the Slice Options button in the options bar. This method is available only in the main Photoshop application, not in the Photoshop Save for Web dialog box.

To display the Slice palette (ImageReady):

Choose Window > Slice, or select the Slice Select tool and click the palette button in the options bar.

Choosing a content type

Formatting and display options for a slice vary according to its content type. There are three types of slice content:

- Image slices contain image data, including rollover states. This is the default content type.
- No Image slices let you create empty table cells that can be populated with text or a solid color. You can enter HTML text in a No Image slice, and if you have the "Text is HTML" flag set, it will be interpreted as HTML when viewed in a browser. No Image slices are not exported as images, and can be previewed in a browser. (See "Previewing an image in a browser" on page 42.)
- (ImageReady) Table slices act as containers for a subset of slices that, upon export, will be written into the HTML text file as a nested table.

To specify a content type:

1 Select a slice. If you are working in Photoshop, double-click the slice with the Slice Select tool to display the Slice Options dialog box.

2 In the Slice Options dialog box (Photoshop) or the Slice palette (ImageReady), select a slice type from the Type pop-up menu.

Specifying slice names

As you add slices to an image, you may find it helpful to rename slices based on their content. By default, user slices are named according to the settings in the Output Options dialog box. Layer-based slices are given the name of the layer from which they are derived.

For more information on setting slice output options, see Photoshop Help.

To change the name of a slice:

Do one of the following:

- Select a slice. If you are working in Photoshop, double-click the slice with the Slice Select tool to display the Slice Options dialog box. In the Slice Options dialog box (Photoshop) or the Slice palette (ImageReady), type a new name in the Name text box.

Note: *The Name text box is not available for No Image slice content.*

- Double-click the slice's name in the Web Content palette (ImageReady), and enter a new name. See "Using the Web Content palette" on page 271.

Specifying slice background colors

The background color option lets you select a color to fill the transparent area (for Image slices) or entire area (for No Image slices) of the slice.

Photoshop and ImageReady do not display the selected background color—you must preview the image in a browser to view the effect of selecting a background color. (See "Previewing an image in a browser" on page 42.)

To choose a background color:

1 Select a slice. If you are working in the Photoshop Save for Web dialog box, double-click the slice with the Slice Select tool to display the Slice Options dialog box.

2 In the Slice Options dialog box (Photoshop) or the Slice palette (ImageReady), select a background color from the Background/BG pop-up menu:

- (Photoshop) Select None, Matte, Eyedropper (to use the color in the eyedropper sample box), White, Black, or Other (using the color picker).
- (ImageReady) Select None, Matte, Foreground Color, Background Color, or Other (to use the color picker), or select a color from the pop-up palette.

Assigning a URL to an Image slice

Assigning a URL to a slice makes the entire slice area a link in the resulting Web page. When a user clicks in the link, the Web browser navigates to the specified URL and target frame. This option is only available for Image slices.

To assign link information to an Image slice:

1 Select a slice. If you are working in Photoshop, double-click the slice with the Slice Select tool to display the Slice Options dialog box.

2 In the Slice Options dialog box (Photoshop) or the Slice palette (ImageReady), enter a URL in the URL text box, or choose a previously created URL from the pop-up menu. You can enter a relative URL or a full URL. If you enter an absolute URL, be sure to include the proper protocol (for example, enter http://www.adobe.com, not www.adobe.com for an HTML link). For more information on using relative URLs and full URLs, see an HTML reference (either printed or on the Web).

3 If desired, enter the name of a target frame in the Target text box, or choose an option from the pop-up menu. A frame name must match a frame previously defined in the HTML file for the document. When a user clicks the link, the specified file displays in the new frame:

- _blank to display the linked file in a new window, leaving the original browser window open.
- _self to display the linked file in the same frame as the original file.
- _parent to display the linked file in its own original parent frameset. Use this option if the HTML document contains frames and the current frame is a child. The linked file displays in the current parent frame.
- _top to replace the entire browser window with the linked file, removing all current frames.

Note: *For more information on frames, see an HTML reference (either printed or on the Web).*

Specifying browser messages

You can specify what messages appear in the browser. In Photoshop, use the Message Text and Alt Tag areas of the Slice Options dialog box. (See "To display the Slice Options dialog box (Photoshop):" on page 261.) In ImageReady, use the Status Bar Message and Alt options of the Slice palette. (If the Message and Alt options aren't showing in ImageReady, choose Show Options from the Slice palette menu, or click the Show Options button ◆ on the palette tab.)

These options are only available for Image slices, and only appear in exported HTML files.

Message Text/Status Bar Message Lets you change the default message in the browser's status area for a selected slice or slices. By default, the slice's link URL, if any, is displayed.

Alt Tag/Alt Lets you specify an Alt tag for a selected slice or slices. The Alt text appears in place of the slice image in nongraphical browsers. It also appears in place of the image while the image is downloading and as a tool tip in some browsers. Specifying Alt tags is a critical aspect of ensuring the accessibility of your page for visitors whose browsers do not display images.

To specify a browser message:

1 Select a slice. If you are working in Photoshop, double-click the slice with the Slice Select tool to display the Slice Options dialog box.

2 In the Slice Options dialog box (Photoshop) or the Slice palette (ImageReady), type the desired text in the Message text box, Alt text box, or both.

Adding HTML text to a slice

Choosing the No Image type for a slice lets you enter text that will appear in the slice area of the resulting Web page. This text is HTML text—you can format it using standard HTML tags. You can also select vertical and horizontal alignment options. For more information on specific HTML tags, see an HTML reference (either printed or on the Web).

Photoshop and ImageReady do not display HTML text in the document window; you must use a Web browser to preview the text. (See "Setting and viewing slice options" on page 261.) Keep in mind that the appearance of text is affected by the

browser settings and operating system it is viewed on. Be sure to preview HTML text in different browsers, with different browser settings, and on different operating systems to see how text will appear on the Web.

Note: *The amount of text in a No Image slice can affect the layout of an exported page. Be sure to experiment with your design in several browsers to ensure consistency.*

To add HTML text to a slice:

1 Select a slice. If you are working in Photoshop, double-click the slice with the Slice Select tool to display the Slice Options dialog box.

2 In the Slice Options dialog box (Photoshop) or the Slice palette (ImageReady), select No Image from the Type pop-up menu.

3 Type the desired text in the text box.

4 (Photoshop Save for Web dialog box and ImageReady) If the text includes HTML formatting tags, select the Text is HTML option. When this option is deselected, all the text you enter (including formatting tags) will be displayed in the resulting Web page.

5 (Photoshop Save for Web dialog box and ImageReady) If desired, select options in the Cell Alignment section of the dialog box.

Horizontal alignment options:

- Default to use the browser's default for horizontal alignment
- Left to align the text to the left side of the slice area
- Center to align the text to the center of the slice area
- Right to align the text to the right side of the slice area

Vertical alignment options:

- Default to use the browser's default for vertical alignment.
- Top to align the text to the top of the slice area.
- Baseline to set a common baseline for the first line of text in cells in the same row (of the resulting HTML table). Each cell in the row must use the Baseline option.
- Middle to center the text vertically in the slice area.
- Bottom to align the text to the bottom of the slice area.

Setting slice table export options (ImageReady)

When exporting slices for use on the Web, Photoshop and ImageReady can optionally export an HTML file providing instructions for a browser in how to display the slices in the proper layout. By default, this exported HTML uses tables to ensure consistent appearance with the original sliced composition. (See "Working with tables (ImageReady)" on page 258.) The Table palette in ImageReady provides an additional level of control over how this formatting table is exported.

Note: *Changes you make to the structure of an exported HTML file don't affect the appearance of the image in your work area; they only modify what it looks like in a browser.*

To set table export options with the Table palette:

1 Choose Window > Table.

2 Select the table for which you want to set options. (See "Selecting tables" on page 259.) By default, the selected table is the top-level table encompassing the entire composition area.

3 Enter a name for the table in the ID input box of the Table palette. Specifying a name for an exported table allows for increased conformity with standards for Web accessibility.

4 Choose a preferred formatting for table export from the Auto Slicing pop-up menu:

Note: *Changing this preference may affect how auto slices are generated.*

- Default maintains the default table formatting.
- As Columns (rowspan) favors the creation of vertical columns in an exported HTML table.
- As Rows (colspan) favors the creation of horizontal rows in an exported HTML table.

To set table dimensions:

1 Select the table for which you want to set options using the Slice Select tool. By default, the selected table is the top-level table encompassing the entire composition area.

2 If it is not visible, show the Dimensions options section of the Table palette by clicking the Dimensions arrow.

3 Determine the width and height of the exported table by choosing Pixels or Percent from the appropriate pop-up menu. Specifying the width or height as a percent will allow the exported table to dynamically adjust in size, based on the size of a Web page visitor's browser window.

Note: *The current X and Y coordinates of the table's upper left corner are displayed in this section for reference. They cannot be changed.*

To set table HTML attributes:

It's best to set the table HTML attributes only for tables that contain No Image slices. Changing these settings with Image slices can break your tables up in undesirable ways.

1 Select the table for which you want to set options. (See "Selecting tables" on page 259.) By default, the selected table is the top-level table encompassing the entire composition area.

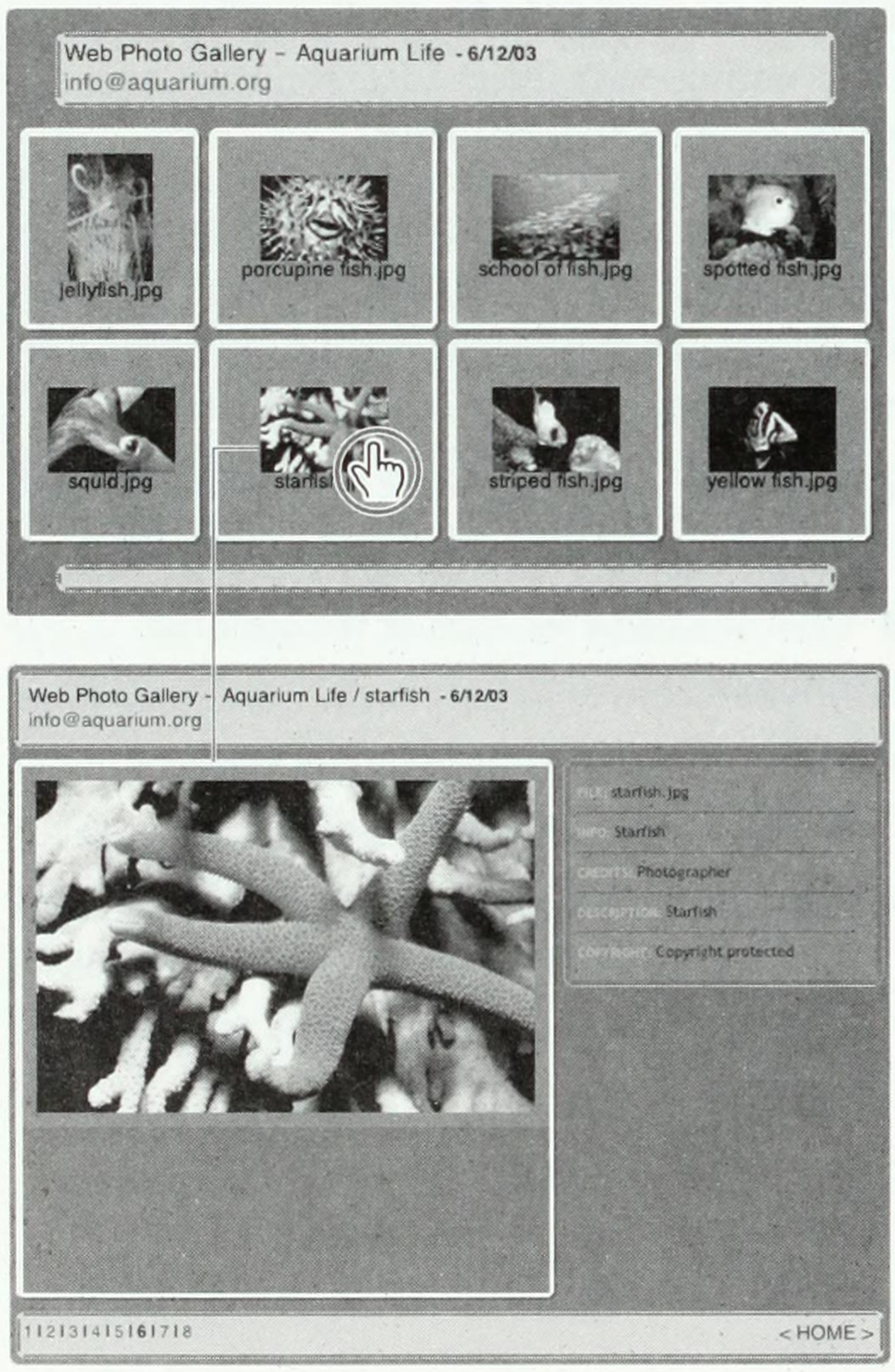
2 If it is not visible, show the Cell options section of the Table palette by clicking the Cell arrow.

3 Choose a value for each of the optional attributes:

- Border determines the width in pixels of the border around the table on export.
- Pad determines the amount of padding in pixels for each table cell. Padding is the amount of space between the edge of a table cell and its contents.
- Space determines the amount of spacing in pixels between each table cell. Spacing is the distance between the edges of any two table cells.

Creating Web photo galleries (Photoshop)

You use the Web Photo Gallery command to automatically generate a Web photo gallery from a set of images. A Web photo gallery is a Web site that features a home page with thumbnail images and gallery pages with full-size images. Each page contains links that allow visitors to navigate the site. For example, when a visitor clicks a thumbnail image on the home page, a gallery page with the associated full-size image loads.



Web photo gallery home page and loaded gallery page

Photoshop provides a variety of styles for your gallery, which you can select using the Web Photo Gallery command. If you are an advanced user who has knowledge of HTML, you can also customize a style by editing a set of HTML template files or create a new style.

Each template for gallery styles comes with different options. If you're using a preset style, some options may be dimmed, or unavailable in that particular style.

For more information on customizing and creating Web photo gallery styles, see Photoshop Help.

To create a Web photo gallery:

When making a gallery from images in the file browser, your images will be presented in the order in which they're displayed in the file browser. If you'd rather see a different order, change the order in the file browser, then select Web Photo Gallery.

1 Select the files or folder you want to use from the file browser.

2 Choose File > Automate > Web Photo Gallery.

3 Under Site, do the following:

- Choose a style for the gallery from the Styles pop-up menu. A preview of the home page for the chosen style appears in the dialog box.
- Enter the email address that you want to display as the contact for the gallery.
- Choose an extension for the generated files from the Extension pop-up menu.

4 Under Source Images, do the following:

- In the Use pop-up menu, choose Folder or Selected Images From Web Browser.
- If you chose Folder, click Browse (Windows) or Choose (Mac OS). Then select the folder containing the images that you want to appear in the gallery, and click OK (Windows) or Choose (Mac OS). Your folder name appears in the dialog box next to the Browse/Choose button. Then check Include All Subfolders to include images inside any subfolders of the selected folder.
- Click Destination, select the destination folder that you want to contain the images and HTML pages for the gallery, and click OK (Windows) or Choose (Mac OS).

5 To set general options for the gallery photos, choose General from the Options pop-up menu. Then do the following:

- Choose an extension for the files (.htm, .html).
- Check Use UTF 8 Encoding for URL if you want that encoding.
- Check Add Width and Height Attributes for images to increase download speed.
- Check Preserve All Metadata to maintain metadata info.

6 To set options for the banner that appears on each page in the gallery, choose Banner from the Options pop-up menu. Then do the following:

- For Site Name, enter the title of the gallery.
- For Photographer, enter the name of the person or organization that deserves credit for the photos in the gallery.
- For Contact Info, enter the contact information for the gallery, such as a telephone number or a business address.
- For Date, enter the date that you want to appear on each page of the gallery. By default, Photoshop uses the current date.

7 If available, for Font and Font Size, choose options for the banner text.

8 To set options for the gallery pages, choose Large Images from the Options pop-up menu. Then do the following:

- To have Photoshop resize the source images for placement on the gallery pages, select Resize Images. Then choose an option for the image size from the pop-up menu or enter a size in pixels. For Constrain, choose which dimensions of the image you want to constrain during resizing. For JPEG Quality, choose an option from the pop-up menu, enter a value between 0 and 12, or drag the slider. A higher value results in better image quality but larger file size.
- For Border Size, enter the width of the border around the image in pixels.
- For Titles Use, specify options to display caption information under each image. Select Filename to display the filename, or select Description, Credits, Title, and Copyright to display description text drawn from the File Info dialog box. For more information, see "Adding file information (Photoshop)" on page 306.
- For Font and Font Size, choose options for the caption text.

9 To set options for the home page, choose Thumbnails from the Options pop-up menu. Then do the following:

- For Size, choose an option for the thumbnail size from the pop-up menu or enter a value in pixels for the width of each thumbnail.
- For Columns and Rows, enter the number of columns and rows that you want to be used to display the thumbnails on the home page. This option doesn't apply to galleries that use the Horizontal Frame Style or Vertical Frame Style.
- For Border Size, enter the width of the border around each thumbnail in pixels.
- For Titles check either Filename, Description, Credits, Title or Copyright.
- For Font and Font Size, choose options for the caption text.

10 To set options for colors of elements in the gallery, choose Customize Colors from the Options pop-up menu. To change the color of a particular element, click its color swatch, and then select a new color using the Color Picker. The Background option lets you change the background color of each page. The Banner option lets you change the background color of the banner.

11 To set options to display text to appear over each image as an antitheft deterrent, choose Security from the Options pop-up menu. Then do the following:

- For Content, select Custom Text to enter customized text. Select Filename, Description, Credits, Title, or Copyright to display text drawn from the File Info dialog box. For more information, see "Adding file information (Photoshop)" on page 306.
- Specify font, color, and text alignment options. To place the text on the image at an angle, choose a rotation option.

Photoshop places the following HTML and JPEG files in your destination folder:

- A home page for your gallery named index.htm or index.html depending on the Extension options. Open this file in any Web browser to preview your gallery.
- JPEG images inside an images subfolder.
- HTML pages inside a pages subfolder.
- JPEG thumbnail images inside a thumbnails subfolder.

Chapter 13: Creating Complex Web Graphics (ImageReady)

Adobe ImageReady provides a powerful, easy way to create complex Web graphics, such as rollovers and animations, in a single document.

About rollovers and states

A *rollover* is a Web effect in which different states of an image appear when a viewer performs a mouse action—such as rolling or clicking—over an area of the Web page. A *state* is defined by a specific configuration of the Layers palette, including layer location, styles, and other formatting options.

By default, every image has one state—the Normal state. The Normal state corresponds to the appearance of an image when it is first loaded into a Web browser and no rollover effects have occurred. You can add states to an image that will occur when a viewer performs a mouse action—such as rolling or clicking—over an area of the Web page.

About working with layers in rollovers and animations

You work with layers in ImageReady to create rollover buttons and animations. Placing the image content for a rollover on its own layer allows you to make changes to the layer's style, visibility, and position to create rollover effects. Likewise, placing each element of an animation on its own layer establishes it as an independent object and enables you to change the position and appearance of the object across a series of frames.

You can also work with rollover effects for layer slices other than the one you have selected. You can use these *remote rollovers* to create effects such as launching an application or running an animation in the Over state. See "Creating remote rollovers" on page 275.

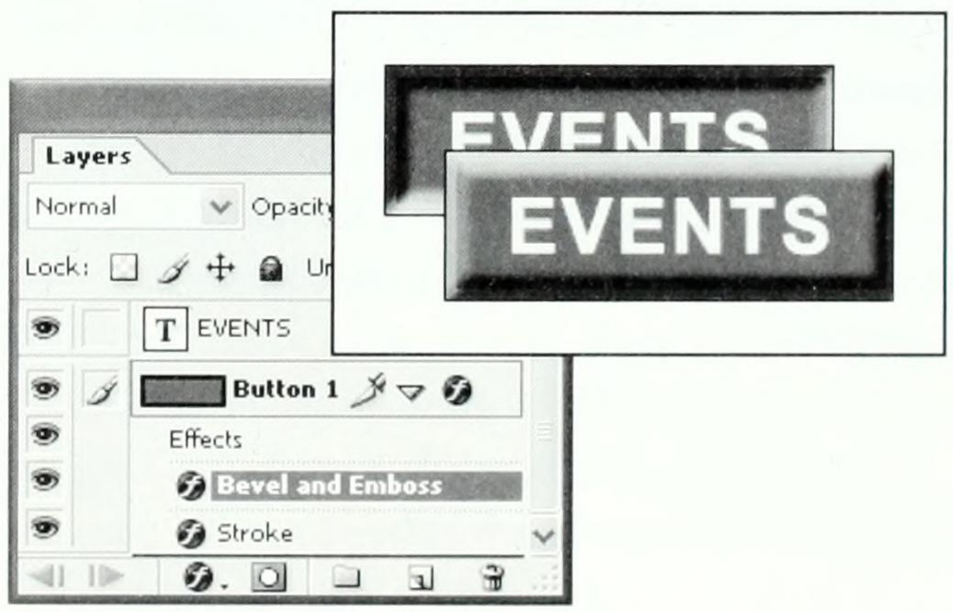


Illustration of a rollover. The button is on its own layer; effects are added to the layer to create a new appearance of the button for the Over state. The text for the word "EVENTS" is also on a separate layer.

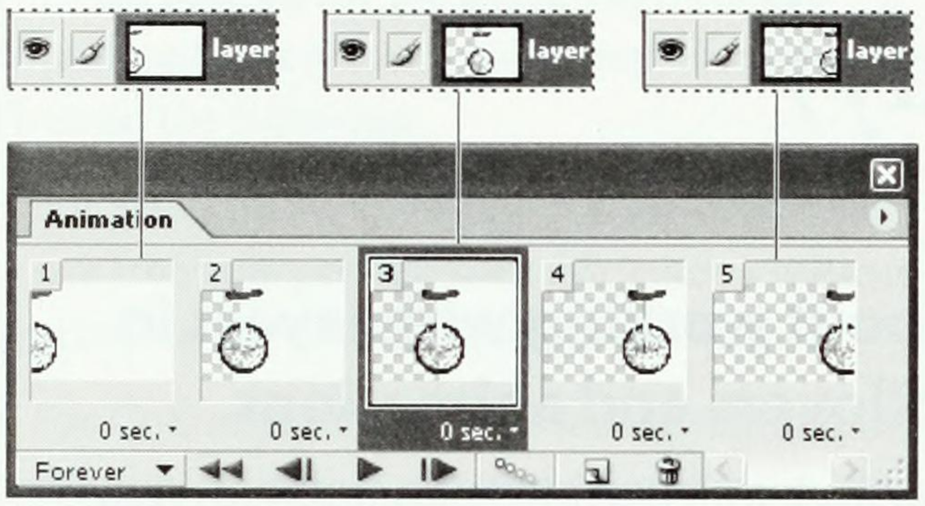


Illustration of an animation. The bicycle image is on its own layer; the position of the layer changes in each frame of the animation.

Editing layers in rollover states and animation frames

Some changes you make to layers affect only the active rollover state or animation frame, while others affect every state and frame in which the layers are included.

State and frame-specific changes Affect only the active animation frame or rollover state. By default, changes you make to layers using Layers palette commands and options—including layer opacity, blending mode, visibility, position, and style—are state and frame-specific. However, you can apply layer changes to all states in a rollover and all frames in an animation using the unify buttons in the Layers palette. (See "Unifying and matching layer rollovers and animations" on page 270.)

Important: *Changes you make to layers in the Normal state or Frame 1—including layer opacity, blending mode, visibility, position, and style—affect all states or frames in which the layers are identical. For example, consider a slice that has a Normal state, an Over state, and a Down state. If the layers in the Normal and Over states are identical, and you apply a layer style in the Normal state, the layer style will also be applied in the Over state.*

Inclusive changes Affect every state and frame in which the layers are included. Changes you make to layer pixel values, using painting and editing tools, color and tone adjustment commands, filters, type, and other image-editing commands, are inclusive.

Unifying and matching layer rollovers and animations

By default, changes you make to layers using Layers palette commands and options—including layer visibility, position, and style—apply only to the frame or state (unless you are working with the Normal state or Frame 1). However, you can use the unify buttons in the Layers palette and the Match command to apply changes to all states in a rollover and all frames in an animation:

- The unify buttons determine how the changes you make to a layer in the active state or frame apply to the other states in a rollover or frames in an animation. When a unify button is selected, changes apply to all states and frames; when a button is deselected, changes apply to only the active state or frame.

- The Layer > Match command lets you apply the layer attributes for an existing state or frame to other states in a rollover and frames in an animation.

To unify layers in rollover states and animation frames:

Select one or more unify buttons in the Layers palette:

- Unify Layer Position button to apply changes you make to a layer's position to all states in a rollover and all frames in an animation.

Note: *The Unify Layer Position button places the contents of the selected layer in the same place on every frame in your animation. If you're trying to show the layer contents moving in the animation, do not use this button.*

- Unify Layer Visibility button to apply changes you make to a layer's visibility to all states in a rollover and all frames in an animation.
- Unify Layer Style button to apply changes you make to a layer's style to all states in a rollover and all frames in an animation.

To match an existing layer across rollover states and animation frames:

1 In the Web Content palette, select the state or frame with the layer attributes you want to use.

2 Select the layer you want to match in the Layers palette.

3 Choose Layer > Match, or choose Match from the Layers palette menu.

4 Select one of the following from the Match Layer dialog:

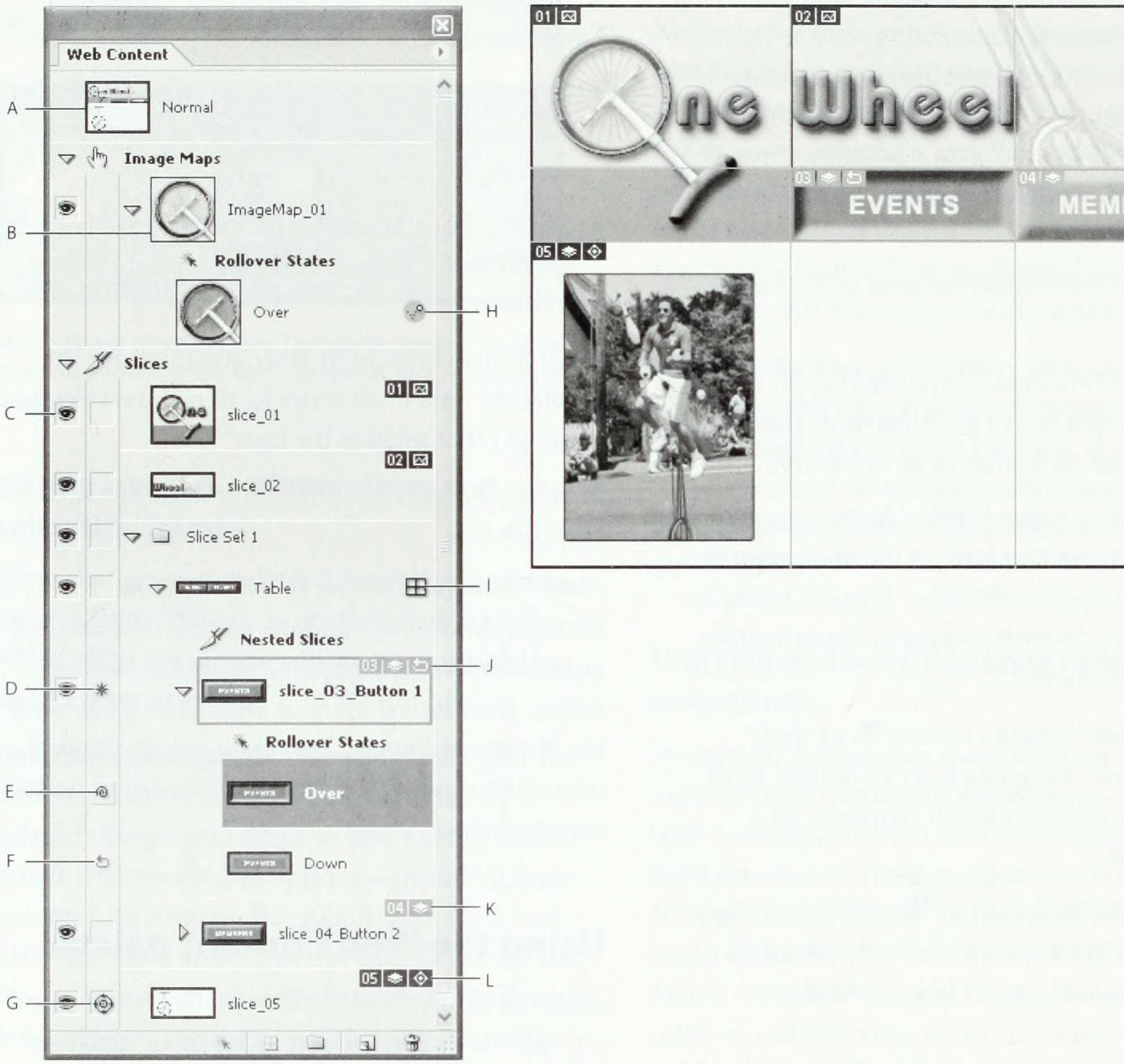
- Current Animation to apply layer attributes for the selected frame to all frames in the animation.
- Current Slice/Image Map's States to apply layer attributes for the selected state to all states in the rollover.
- All Rollovers to apply layer attributes for the selected state to all states in all rollovers (in the image) that include the layer.

5 Select the layer attributes you want to match, and click OK.

Note: *The default setting Propagate Frame 1 Changes dynamically updates all rollover states and animation frames, based on a change in the first frame's position, visibility, or layer style. If you want the changes in Frame 1 to remain only in Frame 1, turn off this option by toggling it in the Layers palette pop-up menu.*

Using the Web Content palette

The Web Content palette lets you create, view, and set options for the rollover states in an image. In addition to rollover states, the Web Content palette can display slices, image maps, and animation frames. Displaying slices and image maps helps you keep track of the elements in an image that contain rollover effects. Displaying animation frames makes it easy to see which states of an image contain animations.



The Web Content palette with slices, image maps, and animation frames
A. *Normal state* ***B.*** *Image map with Over state* ***C.*** *Slice visibility icon* ***D.*** *Indicates this slice has an active rollover state* ***E.*** *Drag the pickwhip to the image window to make the targeted slice remote for this rollover state* ***F.*** *Indicates that the down state has a remote slice associated with it* ***G.*** *Indicates that this slice has a remote target associated with it* ***H.*** *Indicates that this state has animation associated with it* ***I.*** *Indicates that this slice is a nested table* ***J.*** *Nested Slice info: slice number, layer-based indicator, remote-trigger badge* ***K.*** *Individual slice info: slice number, layer-based indicator* ***L.*** *Remote slice info: slice number, layer-based indicator, remote-target badge*

Displaying the Web Content palette Choose Window > Web Content. A check mark indicates that the palette is showing.

Using the Web Content palette menu Click the triangle ▸ in the upper right corner of the palette to access commands for working with rollovers.

Displaying slices and image maps in the Web Content palette In the Web Content palette, there are sections for Image Maps and Slices. Click the disclose triangle to view or hide them. An option in the Palette Options area of the Web Content palette menu toggles the display of slice badges, which are small icons on each slice that display the slice's current properties.

Displaying animation frames in the Web Content palette Choose Palette Options from the Web Content palette menu. Select or deselect Include Animation Frames, and click OK.

Changing the size of rollover thumbnails Choose Palette Options from the Web Content palette menu, and select a thumbnail size. For sizes other than None, select Object Bounds or Entire Document to determine the contents of thumbnails.

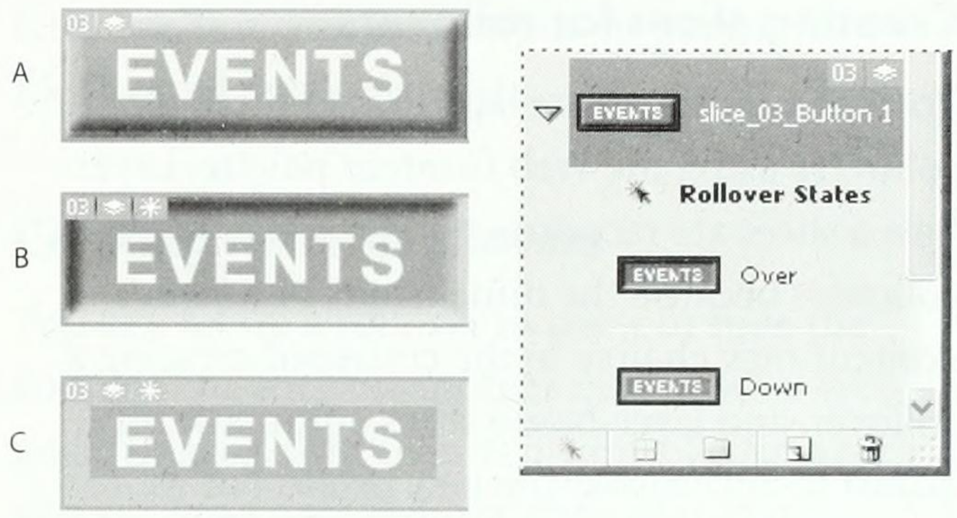
Expanding and collapsing states, slices, and image maps Click the triangle to the left of an item in the Web Content palette. Alt-click (Windows) or Option-click (Mac OS) expands or contracts all options.

Creating and editing rollovers

You use the Web Content palette, in conjunction with the Layers palette, to add rollover effects to an image. When you save the image as a Web page, ImageReady adds JavaScript code to the resulting HTML file to specify rollover states.

Creating rollovers

You use a slice or image map area to define the active area for a rollover. When you add a new state to the image, you capture a snapshot of the slice or image map area in the previous state. You can then use the Layers palette to make changes to the image in the new state. When you save an image with rollover states and an HTML file, each rollover state is saved as a separate image file. (See "Saving selected rollover states to Web pages" on page 279.)



An image with three rollover states
***A.** Normal state **B.** Over state **C.** Down state*

To create a rollover:

1 Create a layer-based slice for the rollover. (See "Creating slices for rollovers" on page 274.) You can also use a layer-based image map to contain the rollover.

2 Create rollover states. (See "Creating and changing rollover states" on page 274.)

3 Select a state in the Web content palette and then edit the layer content for the state to create the rollover effect. (See "State and frame-specific changes" on page 270.)

You can use layer styles to create instant rollover effects. When working with layer-based slices, you can also save the series of states as a rollover style. (See "Applying and creating rollover styles" on page 277.)

4 If you are creating a remote rollover, target the remote slice to the selected state. See "Creating remote rollovers" on page 275.

5 Preview the rollover. (See "Previewing rollover states" on page 276.)

Creating slices for rollovers

You can quickly create layer-based slices for rollovers using the Web Content palette. Layer-based slices are recommended when creating rollovers because the dimensions of a layer's content may change in the course of creating a rollover, and layer-based slices automatically adjust to encompass the new pixels. For more information on the different types of slices, see "Creating and viewing slices" on page 244.

To create a layer-based slice for a rollover:

1 Select the layer in the Layers palette, or choose Layer > New Layer-Based Slice from the main menu. The content of the layer will define the active area for the rollover.

2 Click the Create Layer-based Rollover button in the Web Content palette.

By default, ImageReady adds an Over state to the new slice.

Creating and changing rollover states

When you create a rollover state, ImageReady assigns the type of state by default; however, you can easily change the state.

To add a rollover state to a slice or image map:

1 In the Web Content palette or the image, select the slice or image map you want to add the rollover state to.

Note: *If slices are not visible in the Web Content palette, select Include Slices and Image Maps in the Palette Options dialog box to display them. (See "Using the Web Content palette" on page 271.)*

2 Do one of the following in the Web Content palette:

- Click the Create Rollover State button.
- Choose New Rollover State from the palette menu.

3 Use the default rollover state assigned by ImageReady, or select a different rollover state.

To select a different rollover state:

1 Do one of the following:

- Double-click a rollover state in the Web Content palette.
- Select a rollover state in the Web Content palette, and choose Rollover State Options from the palette menu.

2 Select a state, and click OK.

Over Activates the image when the user rolls over the slice or image map area with the mouse while the mouse button is not pressed. (Over is automatically selected for the second rollover state.)

Down Activates the image when the user presses the mouse button on the slice or image map area. The state appears as long as the viewer keeps the mouse button pressed down on the area.

Click Activates the image when the user clicks the mouse on the slice or image map area. The state appears until the viewer moves the mouse out of the rollover area.

Note: *Different Web browsers, or different versions of a browser, may process clicks and double-clicks differently. For example, some browsers leave the slice in the Click state after a click, and in the Up state after a double-click; other browsers use the Up state only as a transition into the Click state, regardless of single- or double-clicking. To ensure your Web page will function correctly, be sure to preview rollovers in various Web browsers.*

Custom Activates the image of the specified name when the user performs the action defined in the corresponding JavaScript code. (You must create JavaScript code and add it to the HTML file for the Web page in order for the Custom rollover option to function. See a JavaScript manual for more information.)

Selected Activates the rollover state when the user clicks the mouse on the slice or image map area. The state appears until the viewer activates another selected rollover state, and other rollover effects can occur while the selected state is active. For example, a selected state for one button and an over state for another button can occur simultaneously. However, if a layer is used by both states, the layer attributes of the selected state override those of the over state.

Select Use as Default Selected State to activate the state initially when the document is previewed in ImageReady or loaded into a Web browser.

Out Activates the rollover state when the user rolls the mouse out of the slice or image map area. (The Normal state usually serves this purpose.)

Up Activates the rollover state when the user releases the mouse button over the slice or image map area. (The Normal state usually serves this purpose.)

None Preserves the current state of the image for later use, but does not output an image when the file is saved as a Web page.

Creating remote rollovers

You can set up a rollover to show or hide the content of a slice on another part of your Web page. ImageReady gives you control over which slices change on a rollover state, eliminating unwanted images and complexity.

Note: *In Photoshop 7.0 and earlier, all changes made to a document would appear when in a rollover state. This sometimes caused users to create state changes they didn't intend. In ImageReady CS, you have much more control over which slices change on a rollover state.*

To create a remote rollover:

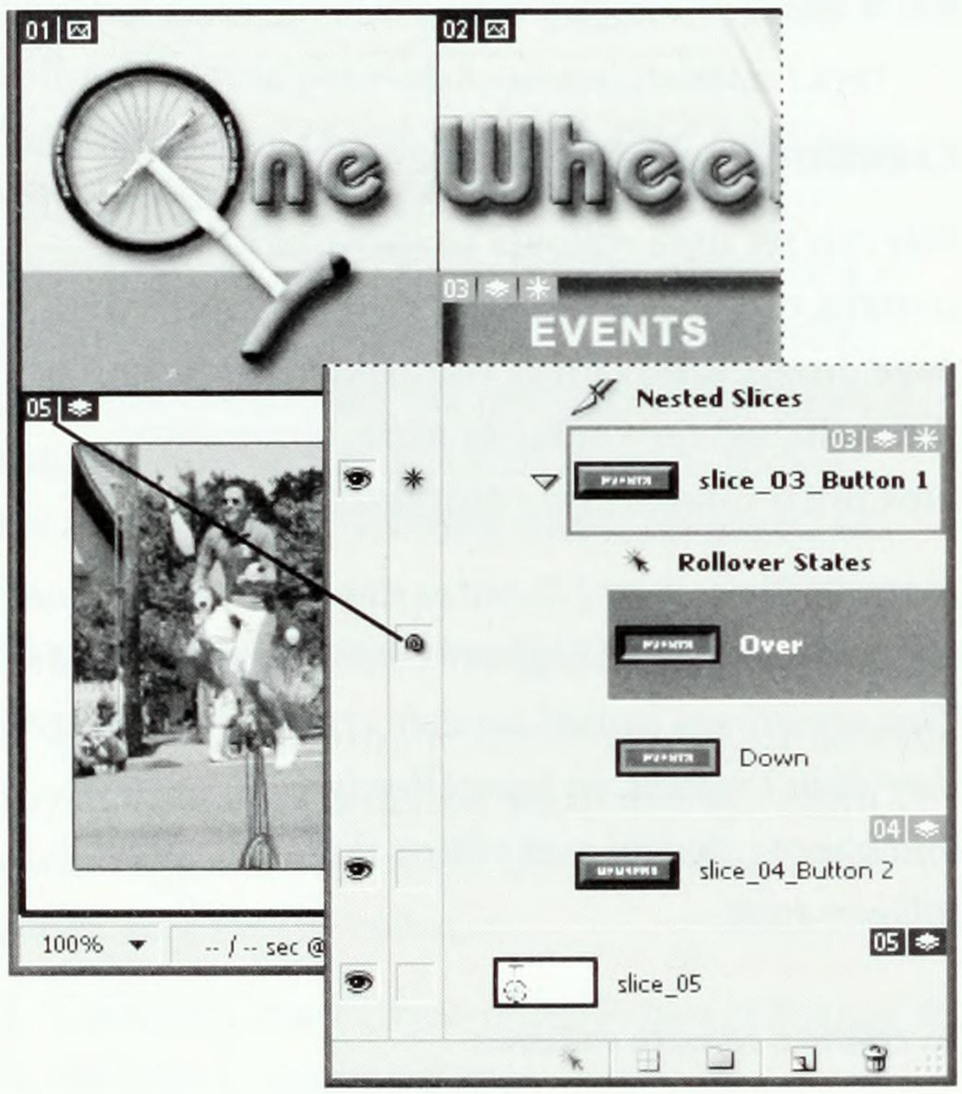
1 Set up a rollover as you normally do. This becomes the button the user will click to display the remote content. See "Creating rollovers" on page 273.

2 Add the remote content to the document and create one or more slices to contain it.

3 For each rollover state, set the desired visibility of the remote content layers in the Layers palette.

4 Specify which remote slices you want to include when you optimize output files in one of these ways:

- To manually mark the remote slices for an individual button, go to the Slice column of the Web Content palette and select the rollover state that will trigger the remote rollover (for example, Down or Click). Drag the Pickwhip icon from the rollover state to the remote content slice in the document window.



A rollover state targeted to a remote slice

- To let ImageReady automatically find and mark all remote slices in the document, go to the Web Content palette menu and choose Find All Remote Slices.
- To let ImageReady automatically find and mark remote slices for a selected state, go to the Web Content palette menu and choose Find Remote Slices For State.

5 Preview the remote rollover in a browser.

See "Previewing rollover states" on page 276.

Previewing rollover states

You can preview rollover effects directly in the ImageReady document window by switching to Document Preview Mode. To preview the rollover effect in your computer's default Web browser, click the Preview in Default Browser button in the toolbox. (See "Previewing an image in a browser" on page 42.)

All remote rollovers affect a previewed document. If a slice has a change that is ignored (not targeted), you can see it in an ImageReady preview, but not in a browser.

To use rollover preview mode:

1 Do one of the following:

- Click the Preview Document button in the toolbox.
- Choose Image > Preview Document.

2 In the document window, perform the action that activates the rollover state. For example, position the mouse over the rollover slice or image map area to preview the Over state. Then click the slice or image map area to preview the Click state.

Note: *If a document contains a Selected state, synthetic states are generated for the other states in the Web Content palette. The synthetic state represents the appearance of the document when the Selected state is active. Synthetic states are generated automatically and cannot be edited.*

To exit rollover preview mode:

Do one of the following:

- Select any tool in the toolbox.
- Click the Cancel Preview button in the options bar, or press Esc (Windows).
- Deselect Preview Document in the Image menu.
- Click the Preview Document button again to toggle it out of preview mode.

Adding animation to rollover states

You can add a multiple-frame animation to a state in an image. Adding an animation to the Normal state will cause the animation to play when the image is loaded in a Web browser. Adding an animation to another type of state will cause the animation to play when a user activates the state.

To add animation frames to a rollover state:

1 In the Web Content palette, select the state in which you want to display an animation. If necessary, expand the slice or image map to view its states. (See "Using the Web Content palette" on page 271.)

2 Make sure you can see the Create Animation Frame button and the New Animation Frame command. If they aren't visible, select Include Animation Frames in the Palette Options dialog box. (See "Using the Web Content palette" on page 271.)

3 Do one of the following to add frames to the animation:

- Click the Create Animation Frame button in the Web Content palette or choose New Animation Frame from the palette menu.
- Create frames in the Animation palette. (See "Animations" on page 279.)

Applying and creating rollover styles

Rollover styles (indicated by a triangle in the upper left corner of the style thumbnail) simplify rollover creation by allowing you to turn a layer into a rollover effect with a single click. A rollover style includes all the attributes of a rollover, including its states and layer effects. When you apply a rollover style to a layer, the layer becomes a layer-based slice.

To apply a rollover style to a layer:

1 Select a layer in the Layers palette.

2 Choose Window > Styles, or click the Styles palette tab, to display the Styles palette.

3 Click the thumbnail for the rollover style you want to apply. Rollover style thumbnails have a triangle in the upper left corner.

To create a rollover style:

1 In the Web Content palette, create the desired rollover states. (See "Creating and changing rollover states" on page 274.)

Note: *You must use a layer-based slice in order to create a rollover style.*

2 Apply the effects to each state using predefined styles in the Styles palette or by manually setting layer effects in the Layers palette. (See "Using layer effects and styles" on page 213.)

3 In the Styles palette, click the Create New Style button, or choose New Style from the palette menu.

4 Enter a name for the style, set style options, and click OK. The Include Rollover States option must be selected in order to create a rollover style.

The new rollover style appears in the Styles palette. The thumbnail preview displays the effects in the Normal state.

Copying and pasting rollover states

You can copy a rollover state and paste it into another state in the current rollover or into a state in another rollover. Layers in the source state replace layers in the destination state.

You can also copy frames from the Animation palette and paste them into the Web Content palette as states, or copy states from the Web Content palette and paste them into the Animation palette as frames.

Note: *Copy commands in the Animation palette and the Web Content palette use an internal clipboard available to these commands only. Copying frames or rollover states does not overwrite the primary ImageReady clipboard.*

To copy and paste rollover states:

1 Select a rollover state, and choose Copy Rollover State from the Web Content palette menu.

2 Select a rollover state in which to paste the copied state:

- Select a state in the current rollover.
- Open or display another rollover, and select a state.

3 Choose Paste Rollover State from the Web Content palette menu.

Duplicating rollover states

Duplicating a state is an easy way to add existing animation frames to a new state.

To duplicate a rollover state:

Select a rollover state, and do one of the following:

- Choose Duplicate Rollover State from the Web Content palette menu.
- Drag the state to the Create Rollover State button.

The duplicate state and frames appear below the original state in the Web Content palette.

Rearranging and deleting rollover states

You can move states between slices and image maps by dragging them to a new location in the Web Content palette. You can also delete individual states or all states in a rollover.

To move states between slices and image maps:

Drag the state up or down in the Web Content palette. When the highlighted line appears in the desired position, release the mouse button.

To delete rollover states:

- To delete one state, select a rollover state, and either click the Trash button on the Web Content palette or choose Delete Rollover State from the Web Content palette menu.
- To delete all states in a rollover, choose Delete Rollover from the Web Content palette menu.

Saving selected rollover states to Web pages

To choose which button is shown as the default selected button when you first view your page in a browser, double-click the selected state of that button in the Web Content palette, and check Use as Default Selected State. This removes the previously selected state and makes your new selection the default.

If you want to generate a unique HTML page for each selected state, choose Output Settings > Saving HTML and Output Multiple HTML Files.

Web page with Down state saved as Default Selected State. The button on the page gives a visual clue as to the location in the Website.

Animations

ImageReady supports animations in Web pages, and provides tools for creating, editing, and displaying animations.

To learn more about creating and editing animations in ImageReady, see Photoshop Help.

Chapter 14: Preparing Graphics for the Web

Creating small graphics files is key to distributing images on the World Wide Web. With smaller files, Web servers can store and transmit images more efficiently, and viewers can download images more quickly. Likewise, when preparing images for CD-ROM or other multimedia viewing, it's important to make the image files as small as possible. This conserves file storage space and decreases the amount of RAM needed for image display.

For more information about advanced optimization features and settings, see Photoshop Help.

About optimization

Optimization is the process of fine-tuning the display quality and file size of an image for use on the Web or other online media. Adobe Photoshop and Adobe ImageReady give you an effective range of controls for compressing the file size of an image while optimizing its online display quality.

There are two methods of optimizing images:

- For basic optimization, the Photoshop Save As command lets you save an image as a GIF, JPEG, PNG, or WBMP file. Depending on the file format, you can specify image quality, background transparency or matting, color display, and downloading method. However, any Web features—such as slices, links, animations, and rollovers—that you've added to a file are not preserved.

For complete information on using the Save As command to save an image as a GIF, JPEG, or PNG file, see "Saving images" on page 287.

- For precise optimization, you can use the optimization features in Photoshop or ImageReady to preview optimized images in different file formats and with different file attributes. You can view multiple versions of an image simultaneously and modify optimization settings as you preview the image to select the best combination of settings for your needs. You can also specify transparency and matting, select options to control dithering, and resize the image to specified pixel dimensions or a specified percentage of the original size.

When you save an optimized file using the Save for Web (Photoshop) or Save Optimized (ImageReady) command, you can choose to generate an HTML file for the image. This file contains all the necessary information to display your image in a Web browser.

The Save for Web (Photoshop) or Save Optimized (ImageReady) commands are designed specifically to provide a more robust and intuitive set of options for saving an image file for use on the Web. This includes a refined sensitivity to file size and image color palette that is unavailable from the Save As command. When creating graphics for Web use, the Save for Web / Save Optimized commands are recommended.

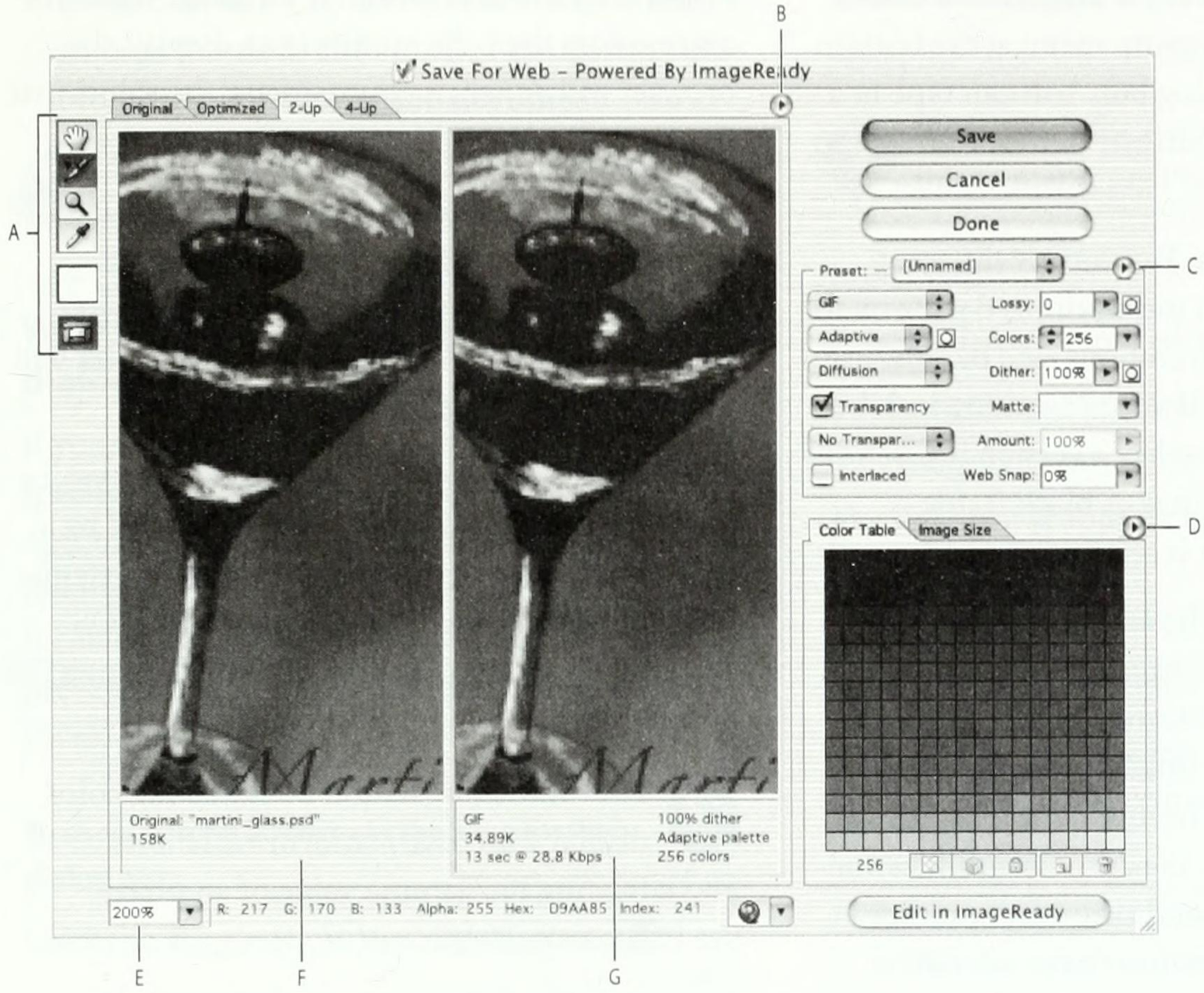
Optimizing images

In Photoshop, you use the Save for Web dialog box to select optimization options and preview optimized artwork. In ImageReady, you can view and work with optimized images at any time in the document window.

For information on optimization options for specific file formats, see Photoshop Help.

Using the Save for Web dialog box (Photoshop)

You use the Save for Web dialog box to select optimization options and preview optimized artwork.



Save for Web dialog box
A. *Toolbox* ***B.*** *Preview pop-up menu* ***C.*** *Optimize pop-up menu* ***D.*** *Color Table pop-up menu*
E. *Zoom text box* ***F.*** *Original image* ***G.*** *Optimized image*

Displaying the Save for Web dialog box Choose File > Save for Web.

Previewing images Click a tab at the top of the image area to select a display option: Original to view the image with no optimization, Optimized to view the image with the current optimization settings applied, 2-Up to view two versions of the image side by side, or 4-Up to view four versions of the image side by side.

If the entire artwork is not visible in the Save for Web dialog box, you can use the Hand tool to bring another area into view. Select the Hand tool (or hold down the spacebar), and drag in the view area to pan over the image. You can also use the Zoom tool to magnify or reduce the view. Select the Zoom tool, and click in a view to zoom in; hold down Alt (Windows) or Option (Mac OS), and click in a view to zoom out.

Alternately, you can specify a magnification level in the Zoom text box/pop-up menu at the bottom of the Save for Web dialog box. You can type in a percentage or choose from one of the preset Zoom options.

Selecting a new version You can try different optimization settings in the Optimized pane or, to compare different optimizations side by side, use the 2-up or 4-up pane. If you're working in 2-Up or 4-Up view, you must select a version before you apply optimization settings. A black frame indicates which version is selected.

Viewing annotations The annotation area below each image in the Save for Web dialog box provides valuable optimization information. The annotation for the original image shows the filename and file size. The annotation for the optimized image shows the current optimization options, the size of the optimized file, and the estimated download time using the selected modem speed. You can choose a modem speed in the Preview pop-up menu.

Editing images in ImageReady To quickly transition to ImageReady for refined Web graphics preparation, click the Edit in ImageReady button at the bottom right of the dialog box.

Predicting final display in the Save for Web dialog box (Photoshop)

You can set the Save for Web dialog box to approximate color dithering and gamma in the viewer's Web browser and monitor.

Previewing browser dither If an image contains more colors than the monitor can display, the browser will *dither*, or approximate, the colors that it cannot display by blending colors that it can.

To show or hide preview of browser dither, choose Browser Dither from the Preview pop-up menu ▶. A check mark indicates that browser dithering is active. Activating Browser Dither will not affect final image output.

Previewing gamma shifts The default *gamma*, or the brightness of midtone values produced by a display device, varies between operating systems. A graphic that appears properly on a Mac OS system may appear much darker on a Windows OS system.

For more information on adjusting color display for cross-platform variations and adjusting the gamma value of an image, see Photoshop Help.

To preview the shifts in gamma within the Save For Web dialog box, choose one of the options below from the Preview pop-up menu. (A check mark indicates that option is active. Activating a preview option will not affect final image output.)

- Uncompensated Color preview makes no adjustments to image gamma. Uncompensated Color is the default setting.
- Standard Windows Color displays an adjustment based on the default Windows gamma.
- Standard Macintosh Color displays an adjustment based on the default Macintosh gamma.

- Use Document Color Profile will adjust the gamma to match any attached document color profile in a color managed document.

For more information about document color profiles, see Photoshop Help.

Working with slices in the Save for Web dialog box (Photoshop)

If your artwork contains multiple slices, you must specify the slices to be optimized. You can apply optimization settings to additional slices by linking the slices. Linked slices in GIF and PNG-8 format share a color palette and dither pattern to prevent the appearance of seams between the slices.

To show or hide all slices in the Save for Web dialog box:

Click the Toggle Slices Visibility button.

To show or hide auto slices in the Save for Web dialog box:

Choose Hide Auto Slices from the Preview pop-up menu. A check mark indicates that slices are hidden.

To select slices in the Save for Web dialog box:

1 Select the Slice Select tool.

2 Click a slice to select it. Shift-click or Shift-drag to select multiple slices.

Note: *In the Save for Web dialog box, unselected slices are dimmed. This does not affect the color of the final image.*

To view slice options in the Save for Web dialog box:

Select the Slice Select tool, and double-click a slice.

For more information on working with image maps, see Photoshop Help.

To link slices:

1 Select two or more slices that you want to link.

2 Choose Link Slices from the Optimize pop-up menu.

The link icon appears on the linked slices.

To unlink slices:

Do one of the following:

- To unlink a slice, select the slice, and then choose Unlink Slice from the Optimize pop-up menu.
- To unlink all slices in an image, choose Unlink All Slices from the Optimize pop-up menu.

Using the Optimize palette (ImageReady)

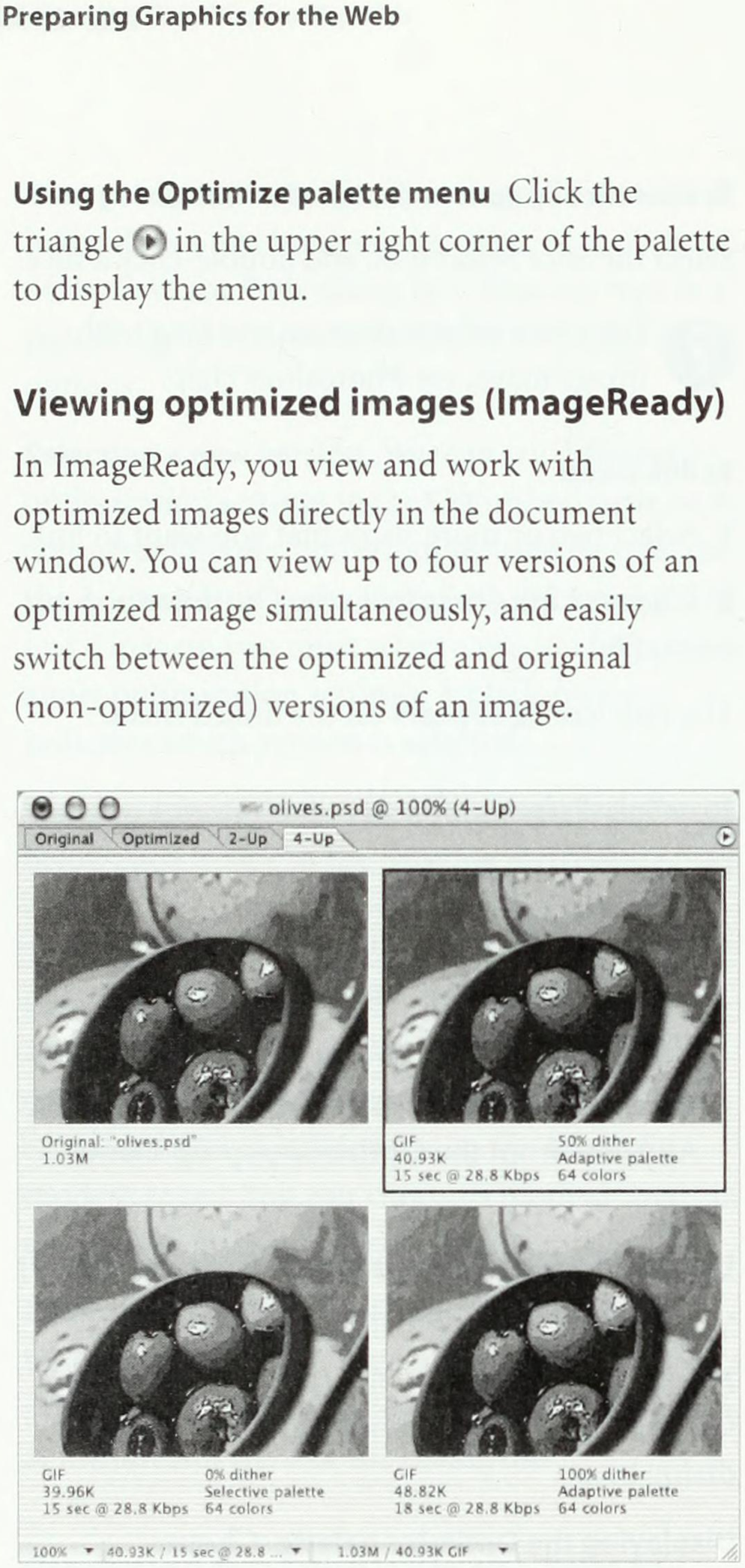
You use the Optimize palette to select optimization options. This palette corresponds to the Optimize panel in the Photoshop Save for Web dialog box.

Displaying the Optimize palette Choose Window > Optimize. To show all the optimization options, click the Show Options control on the Optimize palette tab, or choose Show Options from the Optimize palette menu. To display one set of options, click the Show Options control ▶ for that set of options.

Using the Optimize palette menu Click the triangle ▶ in the upper right corner of the palette to display the menu.

Viewing optimized images (ImageReady)

In ImageReady, you view and work with optimized images directly in the document window. You can view up to four versions of an optimized image simultaneously, and easily switch between the optimized and original (non-optimized) versions of an image.



Document window in 4-Up mode

To preview optimized images:

Click a tab at the top of the document window to select a display option:

- Original to view the image with no optimization.
- Optimized to view the image with the current optimization settings applied.
- 2-Up to view two versions of the image side by side.
- 4-Up to view four versions of the image side by side.

You can switch between views by pressing Ctrl + Y (Windows) or Command + Y (Mac OS).

To select a view:

Click the view you want to select. A black frame indicates which view is selected.

Note: *If you're working in 2-Up or 4-Up view, you must select a view before you apply optimization settings.*

In 2-Up and 4-Up view, the annotation area below each view provides valuable optimization information. The annotation for the original image shows the filename and file size. The annotation for the optimized image shows the current optimization options, the size of the optimized file, and the estimated download time using the selected modem speed. You can choose a modem speed in the image information box at the bottom of the document window. (See "Displaying file and image information" on page 37.)

To hide or show optimization annotations in 2-Up and 4-Up mode:

Choose View > Hide Optimization Info or View > Show Optimization Info.

Chapter 15: Saving and Exporting Images

Adobe Photoshop and Adobe ImageReady support a variety of file formats to suit a wide range of output needs. You can save or export your image to any of these formats. You can also use special Photoshop features to add information to files, set up multiple page layouts, and place images in other applications.

Saving images

The saving options vary between Photoshop and ImageReady. The primary focus of ImageReady is producing images for the Web. If ImageReady doesn't provide the file format or option you need, you can edit in Photoshop. For more information on saving an image for the Web, see "About optimization" on page 281 and "Optimizing images" on page 282.

To preserve all the Photoshop features in your edited image (layers, effects, masks, styles, and so forth), it's best to save a copy of your image in Photoshop format (PSD). Like most file formats, PSD can only support files up to 2 GB in size. In Photoshop, if you are working with documents larger than 2 GB in file size, you can save your image in the new Large Document Format (PSB), Photoshop Raw (flattened image only), and TIFF (up to 4 GB in size only). For more information on saving large documents, see "Saving large documents (Photoshop)" on page 290.

For more information on Photoshop (PSD) and other file formats, see Photoshop Help.

About the save commands

You can use the following commands to save images:

- Save to save changes you've made to the current file. In Photoshop, the file is saved in the current format; in ImageReady, the Save command always saves to PSD format.
- Save As to save an image with a different location or filename. In Photoshop, the Save As command lets you save an image in a different format and with different options. In ImageReady, the Save As command always saves to PSD format.
- Export Original Document (ImageReady) to flatten the layers in a copy of the original image and save the copy in a variety of file formats. Some information (such as slices and optimization settings) is not preserved when an original image is saved to file formats other than Photoshop.
- Save a Version (Photoshop). This command is available for an image that is managed by a Version Cue Workspace. Versioning lets you save different versions of a file and comment on each. For more information, see "Working with Adobe Version Cue managed projects" on page 47.

If you're working with a file from an Adobe Version Cue project, the document title bar provides additional information about the status of the file. (See "Working with Adobe Version Cue managed projects" on page 47.)

- Save for Web (Photoshop), Save Optimized (ImageReady), and Save Optimized As (ImageReady) to save an optimized image for the Web.

For more information on optimizing images and saving optimized images, see Photoshop Help.

Note: *16-bit-per-channel images can only be saved in the following formats using the Save As command: Photoshop, Photoshop PDF, Photoshop Raw, Large Document Format (PSB), Cineon, PNG, and TIFF. When using the Save for Web command with a 16-bit-per-channel image, Photoshop automatically converts the image from 16-bits per channel to 8-bits per channel.*

Saving files

You can save a file with its current filename, location, and format or with a different filename, location, format, and options. You can also save a copy of a file while leaving the current file open on your desktop.

To save changes to the current file:

Choose File > Save.

To save a file with a different name and location:

1 Choose File > Save As.

2 Type a filename, and choose a location for the file.

3 Click Save.

To save a file in a different file format:

1 Do one of the following:

- (Photoshop) Choose File > Save As.
- (ImageReady) Choose File > Export > Original Document.

2 Do one of the following:

- In Photoshop, choose a format from the Format menu.
- In ImageReady, choose from the Save as Type (Windows) or Format (Mac OS) menu.

Note: *In Photoshop, if you choose a format that does not support all features of the document, a warning appears at the bottom of the dialog box. If you see this warning, it is recommended that you save a copy of the file in Photoshop format or in another format that supports all of the image data.*

3 Specify a filename and location.

4 (Photoshop) In the Save As dialog box, select saving options. For more information, see "Setting the file saving options (Photoshop)" on page 289.

5 Click Save.

In both Photoshop and ImageReady, a dialog box appears when saving in some image formats. For more information, see one of the following:

- "Saving files in Photoshop EPS format (Photoshop)" on page 294.
- "Saving files in BMP format" on page 295.
- "Saving files in GIF format (Photoshop)" on page 296.
- "Saving files in JPEG format (Photoshop)" on page 296.
- "Saving files in JPEG 2000 format (Photoshop optional plug-in)" on page 297. (The JPEG 2000 format is only available if the optional JPEG 2000 plug-in is installed.)
- "Saving files in Photoshop PDF format (Photoshop)" on page 291.
- "Saving files in PNG format (Photoshop)" on page 300.
- "Saving files in the QuickTime Movie format (ImageReady)" on page 300. (The QuickTime Movie format is only available if QuickTime® is installed on the computer.)
- "Saving files in SWF format (ImageReady)" on page 300.
- "Saving files in Targa format" on page 302.
- "Saving files in TIFF format" on page 302.

To copy an image without saving it to your hard disk, use the Duplicate command. To store a temporary version of the image in memory, use the History palette to create a snapshot.

For more information on duplicating images and making a snapshot of an image, see Photoshop Help.

Setting the file saving options (Photoshop)

You can set a variety of file saving options in the Save As dialog box. The availability of options depends on the image you are saving and the selected file format. For example, if an image doesn't contain multiple layers, or if the selected file format doesn't support layers, the Layers option is dimmed.

For more information on optimizing images and saving optimized images, see Photoshop Help.

As a Copy Saves a copy of the file while keeping the current file open on your desktop.

Alpha Channels Saves alpha channel information with the image. Disabling this option removes the alpha channels from the saved image.

Layers Preserves all layers in the image. If this option is disabled or unavailable, all visible layers are flattened or merged (depending on the selected format).

Annotations Saves annotations with the image.

Spot Colors Saves spot channel information with the image. Disabling an option removes spot colors from the saved image.

Use Proof Setup, ICC Profile (Windows), or Embed Color Profile (Mac OS) Creates a color-managed document.

For more information on embedding a profile in a document, see Photoshop Help.

Important: *The following image preview and file extension options are only available if the Ask When Saving option is chosen for Image Previews and Append File Extension in the File Handling Preferences dialog box. For more information,* *see "Setting preferences for saving files (Photoshop)" on page 309.*

Thumbnail (Windows) Saves thumbnail data for the file.

Image Previews options (Mac OS) Saves thumbnail data for the file. Thumbnails display in the Open dialog box. You can set these image preview options: Icon to use the preview as a file icon on the desktop, Full Size to save a 72-ppi version for use in applications that can only open low-resolution Photoshop images, Macintosh Thumbnail to display the preview in the Open dialog box, and Windows Thumbnail to save a preview that can display on Windows systems.

Use Lower Case Makes the file extension lowercase.

File Extension options (Mac OS) Specifies the format for file extensions. Select Append to add the format's extension to a filename and Use Lower Case to make the extension lowercase.

Saving large documents (Photoshop)

Photoshop supports documents up to 300,000 pixels in either dimension and offers three file formats for saving documents with images greater than 30,000 pixels in either dimension. Keep in mind that most other applications, including older versions of Photoshop, can only support files up to 2 GB in size or images up to 30,000 pixels in either dimension.

To save a document with a file size larger than 2 GB:

Choose File > Save As and choose one of the following file formats:

Large Document Format (PSB) Supports documents of any pixel size and any file size. All Photoshop features are preserved in PSB files. Currently, PSB files are only supported by Photoshop CS. In Preferences under File Handling, the Enable Large Document Format option must be selected before you can save files in PSB format.

Photoshop Raw Supports documents of any pixel dimension or file size, but does not support layers. Large documents saved in the Photoshop Raw format are flattened.

TIFF Supports files up to 4 GB in size. Documents larger than 4 GB cannot be saved in TIFF format.

For more information about the Large Document Format, Raw, and TIFF file formats, see Photoshop Help.

To enable the Large Document Format in Photoshop:

1 Do one of the following:

- (Windows) Choose Edit > Preferences > File Handling.
- (Mac OS) Choose Photoshop > Preferences > File Handling.

2 Select the Enable Large Document Format (.psb) option.

Saving files in Photoshop PDF format (Photoshop)

You can use the Save As command to save RGB, indexed-color, CMYK, grayscale, Bitmap-mode, Lab color, and duotone images in Photoshop PDF format. You can also use the PDF format to save multiple images in a multipage document or slide show presentation. (See "Creating a PDF presentation" on page 315.) Saving in Photoshop PDF format lets you specify security options for restricting access to the PDF document. The new 128-bit RC4 (Acrobat 6) encryption has an option for letting users view metadata and thumbnails in a secure PDF document using the File Browser.

For more information about the PDF format including the differences between Photoshop PDF and generic PDF, see Photoshop Help.

To save a file in Photoshop PDF format:

1 Choose File > Save As and choose Photoshop PDF from the Format menu. You can select a Color option if you want to embed a color profile or use the profile specified with the Proof Setup command. Click Save.

2 In the PDF Options dialog box, select the options you want, and click OK.

Encoding Determines the compression method (Zip or JPEG).

For more information about file compression, see Photoshop Help.

Note: *Bitmap-mode images are automatically encoded using CCITT compression—the PDF Options dialog box does not appear.*

Save Transparency Preserves transparency when the file is opened in another application. (Transparency is always preserved when the file is reopened in Photoshop or ImageReady.) This option is not available if the file contains a spot color channel or does not contain transparency.

Image Interpolation Anti-aliases the printed appearance of a low-resolution image.

Downgrade Color Profile If you selected ICC Profile (Windows) or Embed Color Profile (Mac OS) for a version 4 profile in the Save dialog box, this option downgrades the profile to version 2. Select this option if you plan to open the file in an application that does not support version 4 profiles.

PDF Security Specifies security options such as password protection and restricted access to a file's content. Select PDF Security and then click the Security Settings button to open the PDF Security dialog box. Specify the security options that you want and then click OK.

Include Vector Data Preserves any vector graphics (such as shapes and type) as resolution-independent objects, ensuring smoother output. When it is selected, you can select the following options:

- Embed Fonts ensures that all fonts used in the file are displayed and printed, even on computers that do not have the fonts installed. Bitmap fonts, fonts that don't allow PDF embedding, substitute fonts, type that uses the faux bold style, and warped type cannot be embedded. Selecting Embed Fonts increases the size of the saved file.
- Use Outlines for Text saves text as paths. Select this option if embedding fonts results in a file that is too large, if you plan to open the file in an application that cannot read PDF files with embedded fonts, or if a font fails to display or print correctly. Text saved as outlines is not searchable or selectable in a PDF viewer. You can, however, edit the text when you reopen the file in Photoshop.

Note: *The PDF viewer may display a substitute font if both Embed Fonts and Use Outlines for Text are deselected.*

To specify PDF Security options:

1 In the PDF Options dialog box, select PDF Security and then click the Security Settings button to open the PDF Security dialog box.

2 In the PDF Security dialog box, select Password Required to Open Document and specify a Document Open Password to prevent users from opening the document unless they type the password you specify. Passwords are case-sensitive.

3 Select Password Required to Change Permission and Passwords and specify a Permissions Password to restrict users from printing and editing the file. Users cannot change these security settings unless they type the passwords that you specify. You cannot use the same password used for the Document Open Password. Users are required to enter the Permissions Passwords when opening the PDF file in Photoshop.

4 Use the Compatibility menu to choose the type of encryption for opening a password-protected document:

40-bit RC4 (Acrobat 3.x,4.x) Specifies a low encryption level.

128-bit RC4 (Acrobat 5) Specifies a high encryption level, but users of Acrobat 3 and Acrobat 4 cannot open PDF documents set with high encryption.

128-bit RC4 (Acrobat 6) Specifies a high encryption level, but users of Acrobat 3, Acrobat 4, and Acrobat 5 cannot open PDF documents set with this encryption. This encryption lets you enable plaintext metadata and thumbnails, an option not available in versions earlier than Acrobat 6.

5 In the Compatibility area of the PDF Security dialog box, specify the following options:

For 40-bit RC4 (Acrobat 3.x,4.x) encryption:

No Printing Prevents users from printing the document.

No Changing the Document Prevents the user from making any changes to the document, including filling in signature and form fields.

No Content Copying or Extraction, Disable Accessibility Prevents users from selecting and copying contents of the PDF document.

No Adding or Changing Comments and Form Fields Prevents the user from adding or making changes to comments and form fields.

For 128-bit RC4 (Acrobat 5) or 128-bit RC4 (Acrobat 6) encryption:

Enable Content Access for the Visually Impaired Lets visually impaired users use screen readers to read the document's contents.

Allow Content Copying and Extraction Lets users select and copy the contents of the PDF document. It also lets utilities that need access to the contents of a PDF file, such as Acrobat Catalog, get to those contents.

No Encryption for Metadata and Thumbnail (Acrobat 6 only) Lets metadata and thumbnails in a secure PDF document be viewed in the File Browser. Among the many uses of this feature, you can let clients read information (metadata) and preview images without the need to give them the password for full access to the secure PDF document.

Changes Allowed Define which editing actions are allowed in the PDF document:

- None prevents the user from making any changes to the document, including filling in signature and form fields.
- Only Document Assembly lets users insert, delete, and rotate pages, as well as create bookmarks and thumbnail pages.
- Only Form Field Fill-in or Signing lets users fill in forms and add digital signatures. This option doesn't let users add comments or create form fields.
- Comment Authorizing, Form Field Fill-in or Signing lets users fill in forms and add digital signatures, and comments.
- General Editing, Comment and Form Field Authoring lets users change the document using any method listed in the Changes Allowed menu, except remove pages.

Printing Specify the quality of printing for the PDF document:

- Not Allowed prevents users from printing the document.
- Low Resolution lets users print the document at no higher than 150-dpi resolution. Printing may be slower because each page is printed as a bitmapped image.
- Fully Allowed lets users print at any resolution, directing high-quality vector output to PostScript and other printers that support advanced high-quality printing features.

6 Click OK.

Saving files in Photoshop EPS format (Photoshop)

Virtually all page layout, word processing, and graphic applications accept imported or placed EPS (Encapsulated PostScript) files. To print EPS files, you should use a PostScript printer. Non-PostScript printers will only print the screen-resolution preview.

For more information about the Photoshop EPS format, see Photoshop Help.

To save a file in Photoshop EPS format:

1 Choose File > Save As and choose Photoshop EPS from the Format menu.

2 In the EPS Options dialog box, select the options you want, and click OK:

Preview Creates a low-resolution image to view in the destination application. Choose TIFF to share an EPS file between Windows and Mac OS systems. An 8-bit preview delivers better display quality but larger file size than a 1-bit preview.

Encoding Determines the way image data is delivered to a PostScript output device:

- Choose ASCII or ASCII85 if you're printing from a Windows system, or if you experience printing errors or other difficulties.
- Binary produces a smaller file and leaves the original data intact. However, some page-layout applications and some commercial print spooling and network printing software may not support binary Photoshop EPS files.
- JPEG compresses the file by discarding some image data. You can choose the amount of JPEG compression from very little (JPEG Maximum Quality) to a lot (JPEG Low Quality). Files with JPEG encoding can be printed only on Level 2 (or later) PostScript printers and may not separate into individual plates.

Include Halftone Screen and Include Transfer Function Control print specifications for high-end commercial print jobs. Consult your printer before selecting these options.

Transparent Whites Displays white areas as transparent. This option is available only for images in Bitmap mode.

PostScript Color Management Converts file data to the printer's color space. Do not select this option if you plan to place the image into another color-managed document. Doing so may disrupt the color management.

Note: *Only PostScript Level 3 printers support PostScript Color Management for CMYK images. To print a CMYK image using PostScript Color Management on a Level 2 printer, convert the image to Lab mode before saving in EPS format.*

Include Vector Data Preserves any vector graphics (such as shapes and type) in the file. However, vector data in EPS and DCS files is only available to other applications; vector data is rasterized if you reopen the file in Photoshop.

Image Interpolation Anti-aliases the printed appearance of a low-resolution image.

Saving files in Photoshop DCS format (Photoshop)

DCS (Desktop Color Separations) format is a version of EPS that lets you save color separations of CMYK or multichannel files.

For more information on the Photoshop DCS format, see Photoshop Help.

To save a file in Photoshop DCS format:

1 Choose File > Save As and choose Photoshop DCS 1.0 or Photoshop DCS 2.0 from the Format menu.

2 In the DCS Format dialog box, select the options you want, and click OK.

The dialog box includes all the options available for Photoshop EPS files. For more information, see "Saving files in Photoshop EPS format (Photoshop)" on page 294. Additionally, the DCS menu gives you the option of creating a 72-ppi composite file that can be placed in a page layout application or used to proof the image:

- DCS 1.0 format creates one file for each color channel in the CMYK image. You can also create a fifth file: a grayscale or color composite. To view the composite file, you must keep all five files in the same folder.
- DCS 2.0 format retains spot-color channels in the image. You can save the color channels as multiple files (as for DCS 1.0) or as a single file. The single-file option saves disk space. You can also include a grayscale or color composite.

Saving files in Photoshop Raw format (Photoshop)

The Photoshop Raw format is a file format for transferring images between applications and computer platforms.

For more information about the Photoshop Raw format, see Photoshop Help.

To save a file in Photoshop Raw format:

1 Choose File > Save As and choose Photoshop Raw from the Format menu.

2 In the Photoshop Raw Options dialog box, do the following:

- (Mac OS) Specify a File Type and File Creator, or accept the default values.
- Specify a Header parameter.
- Select whether to save the channels in an interleaved or noninterleaved order.

Saving files in BMP format

The BMP format is an image format for the Windows operating system. The images can range from black and white (1 byte per pixel) up to 24-bit color (16.7 million colors).

For more information about the BMP format, see Photoshop Help.

To save a file in BMP format:

1 Do one of the following:

2 In Photoshop, choose File > Save As and choose BMP from the Format menu.

- In ImageReady, choose File > Export > Original Document, and choose BMP from the Save as Type (Windows) or Format (Mac OS) menu.

3 Specify a filename and location, and click Save.

4 In the BMP Options dialog box, select a file format, specify the bit depth and, if necessary, select Flip Row Order. For more options, click Advanced Modes and specify the BMP options.

5 Click OK.

Saving 16-bit-per-channel files in Cineon format (Photoshop)

RGB images that are 16 bits per channel can be saved in Cineon format for use in the Kodak Cineon Film System.

For more information about the Cineon format, see Photoshop Help.

To save a 16-bit-per-channel file in Cineon format:

Choose File > Save As and choose Cineon from the Format menu.

Saving files in GIF format (Photoshop)

You can use the Save As command to save RGB, indexed-color, grayscale, or Bitmap-mode images directly in Compuserve GIF (known as GIF) format. The image is automatically converted to indexed-color mode.

For more information about the GIF format, see Photoshop Help.

Note: *You can also save an image as one or more GIF files using the Save for Web command (Photoshop) or the Save Optimized command (ImageReady). For more information on optimizing images,* *see "Optimizing images" on page 282.*

To save a file in GIF format:

1 Choose File > Save As and choose CompuServe GIF from the Format menu.

2 For RGB images, the Indexed Color dialog box appears. Specify conversion options and click OK.

3 Select a row order for the GIF file, and click OK:

- Normal displays the image in a browser only when download is complete.
- Interlaced displays low-resolution versions of the image in a browser as the file downloads. Interlacing makes download time seem shorter, but it also increases file size.

Saving files in JPEG format (Photoshop)

You can use the Save As command to save CMYK, RGB, and grayscale images in JPEG format. JPEG compresses file size by selectively discarding data.

For more information about file compression and the JPEG format, see Photoshop Help.

Note: *You can also save an image as one or more JPEG files using the Save for Web command (Photoshop) or the Save Optimized command (ImageReady). For more information on optimizing images,* *see "Optimizing images" on page 282.*

To save a file in JPEG format:

1 Choose File > Save As and choose JPEG from the Format menu.

2 In the JPEG Options dialog box, select the options you want, and click OK.

Matte If the image contains transparency, choose a Matte color to simulate the appearance of background transparency.

For more information on simulating transparency using the Matte option, see Photoshop Help.

Image Options To specify the image quality, choose an option from the Quality menu, drag the Quality pop-up slider, or enter a value between 0 and 12 in the Quality text box.

Format Options Select Baseline ("Standard") to use a format recognized by most Web browsers, Baseline Optimized for optimized color and a slightly smaller file size, or Progressive to display a series of increasingly detailed scans (you specify how many) as the image downloads. Baseline Optimized and Progressive JPEG images are not supported by all Web browsers.

Size To view the estimated download time, select a modem speed. (The Size preview is only available when Preview is selected.)

Note: *Some applications may not be able to read a CMYK file saved in JPEG format. In addition, if you find that a Java application cannot read your JPEG file (in any color mode), try saving the file without a thumbnail preview.*

Saving files in JPEG 2000 format (Photoshop optional plug-in)

To save files in the JPEG 2000 format, the optional JPEG 2000 plug-in must be installed in Adobe Photoshop CS/Plug-Ins/Adobe Photoshop Only/File Formats. The optional JPEG 2000 plug-in can be found on the Photoshop CS installation CD in Goodies/Optional Plug-Ins/Photoshop Only/File Formats. You can save images in extended JPEG 2000 (JPF) format, which provides an expanded set of options compared to the standard JPEG 2000 (JP2) format. However, you can make files JP2 compatible by selecting the appropriate option in the JPEG 2000 dialog box.

For more information on the JPEG 2000 format, see Photoshop Help.

Note: *You cannot save Duotone, Multichannel, or Bitmap mode images in JPEG 2000 format. To save these files as JPEG 2000, first convert them to RGB color.*

To save a file in JPEG 2000 format:

1 Choose File > Save As, and choose JPEG 2000 from the Format menu.

2 Specify a filename and location, select saving options, and click Save, which opens the JPEG 2000 dialog box.

Important: *If you want to save a JP2-compatible file, you must select the ICC Profile option (Windows) or the Embed Color Profile option (Mac OS) in the Save As dialog box. Otherwise, the JP2 Compatible option will be unavailable in the*

JPEG 2000 dialog box. The JP2-compatible option slightly increases the JPF file size. Keep in mind that JP2 viewers are not required to support ICC profiles and metadata present in JPF files, so color fidelity and other features may not work as expected.

3 (Optional) Enter a value in the File Size text box to set a target size for the saved file. The value in the Quality text box will adjust to the best quality for the file size you enter.

4 Do one of the following to specify the image quality:

- Select Lossless to compress the image without losing image quality. Selecting this option creates a larger file.
- Deselect Lossless to create a smaller file. Then drag the Quality pop-up slider or enter a value in the Quality text box to specify the image quality. A higher quality value results in better image quality and a larger file size.

If you specify an image quality that conflicts with a target file size you entered previously, Photoshop automatically changes the value in the File Size text box.

5 Select Fast Mode for faster previewing or encoding of the image. File size control, progressive optimization, and lossy with integer wavelet filter are not supported in Fast Mode.

6 Select Include Metadata to include file information. If your image file contains paths and you wish to store the paths information in the JPEG 2000 file, the Metadata option must be selected.

Deselect the Include Metadata and Include Color Settings options to make the image file size smaller.

7 Select Include Transparency to preserve transparency that exists in the original image. The Include Transparency option is dimmed if the image does not contain transparency.

8 Select JP2 Compatible to create a file that can be displayed in viewing software that supports standard JPEG 2000 (JP2) format but does not support extended JPEG 2000 (JPF) format.

9 Click the Advanced Options button to set the following options:

Compliance Chooses the types of devices with which the file is compliant. Currently, only general devices (such as Web browsers) are supported.

Wavelet Filter Specifies the type of numbers (coefficients) used to encode the file. Float is more accurate but cannot be used for Lossless compression. Selecting the Lossless compression option automatically sets the Wavelet Filter option to Integer.

Choose Float or Integer depending on your image and the result you want. Integer is usually the best option for an overall consistent appearance in the image. Float may sharpen the image but could cause it to lose some quality around edges.

Tile Size Chooses the size of the tiles used in the image. When low quality values are used to optimize images smaller than 1024 x 1024 pixels, using the largest tile size will produce better results.

A tile size of 1024 is best for most images. When creating files with small dimensions (for cell phones, and so forth), a lower tile size should be used.

Metadata Format Select the metadata format(s) to include in the image file. JPEG2000 XML is JPEG 2000-specific XML data; this option is only available if the image file contains this data. XMP is File Info data and EXIF is digital camera data.

Color Settings Format Select the Color Settings Format to include in the image file. The ICC Profile option includes the full ICC profile specified in the Save As dialog box and is the default option. The Restricted ICC Profile option is intended for use in portable devices such as cell phones and PDAs. A Restricted ICC Profile must be in a JP2 file.

10 Choose an Optimization Order from the Order menu:

Growing Thumbnail Presents a sequence of small thumbnail images increasing in size until they reach the image's full size.

Progressive Presents an image that displays increasingly detailed versions of the entire image as data becomes available (for example, streaming over the Web to a browser). Progressive JPEG images have a slightly larger file size, require more RAM for viewing, and are not supported by all applications and JPEG 2000 viewing software.

Color Makes the image appear first as a grayscale image, then as a color image.

Region of Interest If your Photoshop document contains one or more alpha channels, you can choose an alpha channel to define a Region of Interest.

Once the alpha channel is loaded as a Region of Interest, choose an Enhance value to increase or decrease the quality of the Region of Interest relative to the rest of the image. Note that Enhance does not change the file size of the image, so enhancing the area inside the alpha channel will decrease the quality of the area outside the alpha channel (and vice versa).

The Region of Interest and Enhance options are not available if your Photoshop document does not have an alpha channel.

Note: *The channel (alpha, spot, or Quick Mask) used to define the Region of Interest will be discarded in the final saved JPEG 2000 file.*

11 To preview how the image will appear in JPEG 2000 viewing software, make sure you chose an Optimization Order in step 10. The Preview option takes into consideration how the image is optimized and will open the image accordingly. In the Download Preview area of the JPEG 200 dialog box, choose a download rate from the pop-up menu to view the estimated download time of the image, then click the Preview button.

You can use the Set Preview Zoom pop-up menu to zoom in or out of the image for better viewing. You can also use the Zoom tool 🔍 and the Hand tool ✋ to adjust the viewing area of your preview.

12 When you're done setting options, click OK to generate the JPEG 2000 image file.

Saving files in PNG format (Photoshop)

You can use the Save As command to save RGB, indexed-color, grayscale, and Bitmap-mode images in PNG format.

For more information on the PNG format, see Photoshop Help.

Note: *You can also save an image as one or more PNG files using the Save for Web command (Photoshop) or the Save Optimized command (ImageReady). For more information on optimizing images, see "Optimizing images" on page 282.*

To save a file in PNG format:

1 Choose File > Save As and choose PNG from the Format menu.

2 Select an Interlace option:

- None displays the image in a browser only when download is complete.
- Interlaced displays low-resolution versions of the image in a browser as the file downloads. Interlacing makes download time seem shorter, but it also increases file size.

3 Click OK.

Saving files in the QuickTime Movie format (ImageReady)

The QuickTime format is used to play back, create, and deliver multimedia. To save in the QuickTime Movie format, you need QuickTime installed on your computer.

For more information about the QuickTime Movie format, see Photoshop Help.

To save files in QuickTime Movie format:

1 Choose File > Export > Original Document, and choose QuickTime Movie from the Save as Type (Windows) or Format (Mac OS) menu.

2 Specify a filename and location, and click Save.

3 In the Compression Settings dialog box, choose a compression from the pop-up menu, specify the compression options, and then click OK.

Saving files in SWF format (ImageReady)

In ImageReady, you can export a document as a SWF file, which can then go directly to the Web or be imported into the Macromedia® Flash™ application. In a multilayered PSD file, each layer of the PSD file can be exported as one SWF object, or each layer can be exported as separate SWF files using the Layers as Files command. When the entire PSD file is exported to one SWF file, animation frames are exported as SWF animation frames. URLs in slices and image maps will be preserved when exported. Rollovers are ignored. The exported images will not change when you rollover them.

For more information about the SWF format, see Photoshop Help.

Layers in a PSD file can be preserved when exported from ImageReady and then imported into Macromedia Flash. Use the Layers as Files command to export the individual layers as separate SWF files. When the SWF files are imported in a SWF document, they each appear on separate layers.

You can also export individual animation frames as separate SWF files using the Animation as Files command. Again, each SWF file appears on a separate layer when imported into Macromedia Flash.

To export an ImageReady file in SWF format:

1 Do one of the following:

- Choose File > Export > Macromedia® Flash™ SWF.
- Choose File > Export > Original Document. In the Export Original dialog box, choose Macromedia® Flash™ SWF from the Save as Type (Windows) or Format (Mac OS) menu. Enter a name for the SWF file and choose a destination. Click Save.

The Macromedia® Flash™ (SWF) Export dialog box opens, letting you select options for exporting to SWF format.

2 Under Export Options, select from the following options:

Preserve Appearance Retains the appearance of the PSD file and may rasterize a text or shape layer if it cannot be exported natively to SWF. If Preserve Appearance is not selected, all effects that cause flattening or rasterization of vectors are dropped, including ones on raster layers.

Generate HTML Generates HTML in addition to the SWF file.

3 Select the Enable Dynamic Text option to map text variables to SWF dynamic text. SWF dynamic text disappears on import into Macromedia Flash. Therefore, mapping text variables to SWF dynamic text would only be useful if the generated SWF file is going directly to the Web.

4 Under Bitmap Options, either leave the Format menu set at Auto Select or choose a file format used for bitmap images. If you choose JPEG, you can enter JPEG Quality to specify how much compression to use.

5 Under Text Options, specify which characters to embed by choosing either None, Full Set, or Partial Set from the Embed Fonts menu.

If you choose Partial Set, click any of the following buttons to specify the characters of the partial set:

AB includes all uppercase characters.

ab includes all lowercase characters.

includes all numbers.

"" includes all punctuations.

You can also enter specific characters to embed in the Extra text box.

Note: *Whenever possible, PSD text and vector layers are converted into SWF text and vector objects. If layer effects or blending modes prohibit a native mapping of text and vectors, they can then be flattened into bitmap objects.*

6 Click OK. If you chose File > Export > Macromedia® Flash™ SWF in step 1, the Export as Macromedia® SWF dialog box opens. Enter a name for the SWF file and choose a destination. Click Save.

To export layers or animation frames as individual SWF files:

1 Do one of the following:

- Choose File > Export > Layers as Files. If you're exporting only specific layers, select the layers in the Layers palette before you choose the Layers as Files command.
- Choose File > Export > Animation as Files. If you're exporting only specific frames, select the frames in the Animation palette before you choose the Animation as Files command.

2 In the Export Layers as Files dialog box, under File Options, click Browse (Windows) or Choose (Mac OS) to select a destination for the exported files.

3 Enter a name in the Base Name text box to specify a common name for the files.

4 Set the Save Options.

5 Choose SWF from the Format menu under Format Options and set the options for your SWF files.

6 Click OK.

For more information about the options in the Export Layers as Files dialog box or the Export Frames as Files dialog box, see "Exporting layers as files (ImageReady)" on page 303 and "Exporting animation frames as files (ImageReady)" on page 304.

Saving files in Targa format

The Targa (TGA) format supports images of any dimensions with between 1 and 32 bits of color. It is designed for Truevision's hardware, but it is also used in other applications.

For more information on the Targa format, see Photoshop Help.

To save a file in Targa format (ImageReady):

1 Do one of the following:

- In Photoshop, choose File > Save As and choose Targa from the Format menu.
- In ImageReady, choose File > Export > Original Document, and choose Targa from the Save as Type (Windows) or Format (Mac OS) menu.

2 Specify a filename and location, and click Save.

3 In the Targa Options dialog box, select a resolution, select the Compress (RLE) option if you want to compress the file, and then click OK.

Saving files in TIFF format

TIFF is a flexible raster (bitmap) image format supported by virtually all paint, image-editing, and page-layout applications.

For more information on the TIFF format, see Photoshop Help.

To save a file in TIFF format (Photoshop):

1 Choose File > Save As, and choose TIFF from the Format menu.

2 In the TIFF Options dialog box, select the options you want, and click OK.

Image Compression Specifies a method for compressing the composite image data.

Byte Order Photoshop and most recent applications can read files using either IBM PC or Macintosh byte order. However, if you don't know what kind of program the file may be opened in, select the platform on which the file will be read.

Save Image Pyramid Preserves multiresolution information. Photoshop does not provide options for opening multiresolution files; the image opens at the highest resolution within the file. However, Adobe InDesign and some image servers provide support for opening multiresolution formats.

Save Transparency Preserves transparency as an additional alpha channel when the file is opened in another application. Transparency is always preserved when the file is reopened in Photoshop or ImageReady.

Layer Compression Specifies a method for compressing data for pixels in layers (as opposed to composite data). Many applications cannot read layer data and will skip over it when opening a TIFF file. Photoshop, however, can read layer data in TIFF files. Although files that include layer data are larger than those that don't, saving layer data alleviates the need to save and manage a separate PSD file to hold the layer data. Choose Discard Layers and Save a Copy to flatten the image.

For more information about file compression, see Photoshop Help.

Note: To have Photoshop prompt you before saving an image with multiple layers, select Ask Before Saving Layered TIFF Files in the File Handling area of the Preferences dialog box.

To save a file in TIFF format (ImageReady):

1 Choose File > Export > Original Document, and choose TIFF from the Save as Type (Windows) or Format (Mac OS) menu.

2 Specify a filename and location, and click Save.

3 Select a compression method, and click OK.

Exporting layers as files (ImageReady)

You can export and save layers as individual files using a variety of formats, including PSD, GIF, JPEG, PNG, WBMP, and SWF. Different format settings can be assigned to individual layers, or one format can apply to all exported layers. Layers are saved with automatic file naming. You can set options to control the generation of names.

All format settings are saved with your ImageReady document for convenience when you use this feature again.

To export layers as files:

1 Choose File > Export > Layers as Files. If you're exporting only specific layers, select the layers in the Layers palette before you choose the Layers as Files command.

Note: *Click a layer in the Layers palette to select it. Shift-click to select a series of layers. Ctrl-click (Windows) or Command-click (Mac OS) to select noncontiguous layers.*

2 In the Export Layers as Files dialog box, under File Options, click Choose to select a destination for the exported files.

3 Enter a name in the Base Name text box to specify a common name for the files.

Click the Set button to set up specific options for file naming. Choose elements from the pop-up menus or enter text into the fields to be combined into the default names for all files. Elements include layer name, document name, layer number, file creation date, punctuation, and file extension.

4 Specify how you want to save the files by choosing from the following options:

- For Export, select the layers to be exported by choosing either All Layers, Top Level Layers and Layer Sets, or Selected Layers. The Selected Layers option is only available if you select layers before choosing the Layers as Files command. If your multilayered document has a Background layer, you can select the Include Background option to include it in the export.
- For Layer, choose a layer from the Layer pop-up menu if you are using a separate format for each layer. You can also use the navigation buttons ◄ ► to choose the layer.
- For Apply, choose either One Format for All Layers or Separate Format for Each Layer.

To preview the exported image for a specific layer, select the Preview option and then use the either the Layer pop-up menu or navigation buttons to choose the layer to preview.

5 Under Format Options, either choose a setting from the Preset pop-up menu or manually set the file format and compression.

For more information about format options and compression, see Photoshop Help.

If you're using a separate format for each layer, choose another layer and then set the format options. Do this for all the subsequent layers you're exporting.

A custom setting can be saved for reuse. Adjust the settings. The Unnamed option is automatically chosen in the Preset menu. Click the Save Current Layer Settings icon, name the new setting, and save it to the Optimized Settings folder. You can also delete a setting by choosing it from the Preset menu and then clicking the Delete Current Layer Setting icon.

6 Click OK.

Exporting animation frames as files (ImageReady)

You can export and save animation frames as individual files using a variety of formats, including GIF, JPEG, PNG, WBMP, and SWF. Different format settings can be assigned to individual frames, or one format can apply to all exported frames. Frames are saved with automatic file naming. You can set options to control the generation of names.

All format settings are saved with your ImageReady document for convenience when using the feature again.

To export animation frames as files:

1 Choose File > Export > Animation Frames as Files. If you're exporting only specific frames, select the frames in the Animation palette before you choose the Animation Frames as Files command.

Click a frame in the Animation palette to select it. Shift-click to select a series of frames. Ctrl-click (Windows) or Command-click (Mac OS) to select noncontiguous frames.

2 In the Export Animation Frames as Files dialog box, under File Options, click Choose to select a destination for the exported files.

3 Enter a name in the Base Name text box to specify a common name for the files.

Click the Set button to set up specific options for file naming. Elements include document name, frame number, file creation date, punctuation, and file extension.

4 If you selected frames in the Animation palette before choosing the Animation Frames as Files command, you can enable the Selected Frames Only option to export only the frames you selected. Deselecting this option exports all the frames in your animation regardless of whether you selected them or not.

To preview the exported image for a specific frame, select the Preview option and then use either the Preview menu or navigation buttons ◄ ► to choose the frame to preview.

5 Under Format Options, either choose a setting from the Preset pop-up menu or manually set the file format and compression.

For more information about format options and compression, see Photoshop Help.

A custom setting can be saved for reuse by clicking the Save Current Format Preset icon, naming the new setting, and saving it to the Optimized Settings folder. You can also delete a setting by choosing it from the Preset menu and then clicking the Delete Current Format Preset icon.

6 Click OK.

Exporting images in ZoomView format (Photoshop)

ZoomView is a format for delivering high-resolution images over the Web. With the Viewpoint Media Player, users can zoom into or out of an image and pan the image to see its various parts.

When you export an image in ZoomView format, Photoshop creates the following files:

- An MTX file that defines the image to be displayed.
- An HTML file that loads the Viewpoint Media Player and points to the MTX file.
- A folder containing tiles that are used to display the image.
- A folder containing VBS and JavaScript scripts that are used by the HTML file.

To export an image in ZoomView format:

1 Choose File > Export > ZoomView.

2 Set the following options, and click OK:

Template Specify a template for generating the MTX, HTML, and auxiliary files. Choose a template (Plain or With Instructions) from the pop-up menu, or click the Load button to choose a different ZoomView Template (ZVT) file. You can download additional templates from the Viewpoint Web site.

Output Location Click Folder to specify an output location. Enter a name in the Base Name text box to specify a common name for the files.

Path to Broadcast License File Specify a URL for the broadcast license file. The Viewpoint Corporation requires that all publishers of ZoomView content acquire a broadcast license. To apply for a key, click Get License.

Image Tile Options ZoomView technology uses image tiling to load only the part of a high-resolution image that a user wants see. Select a Tile Size to control how many pixels are in each tile. A tile size of 128 is recommended for small images; a tile size of 256 is recommended for large images.

To specify an amount of compression for each tile image, choose an option from the Quality menu, drag the Quality pop-up slider, or enter a value between 0 and 13 in the Quality text box. Select Optimize Tables to create enhanced JPEGs with slightly smaller file sizes. This option is recommended for maximum file compression.

Browser Options Specify a width and height for the image in the Viewpoint Media Player. Select Preview in Browser to launch your default Web browser and load the generated HTML file after you click OK.

Adding file information (Photoshop)

File information—also called *metadata*—is increasingly important in all types of publishing. Photoshop supports the information standard developed by the Newspaper Association of America (NAA) and the International Press Telecommunications Council (IPTC) to identify transmitted text and images. This standard includes entries for descriptions, keywords, categories, credits, and origins.

In Windows and Mac OS, you can add file information to files saved in Photoshop, Large Document Format (PSB), TIFF, JPEG, EPS, and PDF formats. In Mac OS, you can also add file information to files in other Photoshop-supported formats except GIF. The information you add is embedded in the file using XMP (eXtensible Metadata Platform). XMP provides Adobe applications and workflow partners with a common XML framework that standardizes the creation, processing, and interchange of document metadata across publishing workflows. When you save files from Photoshop that contain keywords, those keywords are not displayed in Adobe Acrobat's File Info dialog when the file is opened in Acrobat. For information on adding metadata to a file, see "Working with the metadata palette" on page 86 and "Adding metadata to files" on page 88.

Note: It's possible to add metadata in ImageReady using the options in the Optimize palette.

For more information about including image metadata, see Photoshop Help.

Adding digital copyright information

You can add copyright information to Photoshop images and notify users that an image is copyright-protected via a digital watermark that uses Digimarc ImageBridge technology. The watermark—a digital code added as noise to the image—is virtually imperceptible to the human eye. The Digimarc watermark is durable in both digital and printed forms, surviving typical image edits and file format conversions.

Embedding a digital watermark in an image lets viewers obtain information about the creator of the image. This feature is particularly valuable to image creators who license their work to others. Copying an image with an embedded watermark also copies the watermark and any information associated with it.

For more detailed information on embedding Digimarc digital watermarks, refer to the Digimarc Web site at www.digimarc.com.

Before adding a digital watermark

Keep in mind the following considerations before embedding a digital watermark in your image.

Color variation The image must contain some degree of variation or randomness in color to embed the digital watermark effectively and imperceptibly. The image cannot consist mostly or entirely of a single flat color.

Pixel dimensions The Digimarc technology requires a minimum number of pixels to work. Digimarc recommends the following minimum pixel dimensions for the image to be watermarked:

- 100 pixels by 100 pixels if you don't expect the image to be modified or compressed prior to its actual use.
- 256 pixels by 256 pixels if you expect the image to be cropped, rotated, compressed, or otherwise modified after watermarking.
- 750 pixels by 750 pixels if you expect the image to appear ultimately in printed form at 300 dpi or greater.

There is no upper limit on pixel dimensions for watermarking.

File compression In general, a Digimarc watermark will survive lossy compression methods such as JPEG, though it is advisable to favor image quality over file size (a JPEG compression setting of 4 or higher works best). In addition, the higher the Watermark Durability setting you choose when embedding the watermark (see "Using the Watermark Durability setting" on page 309), the better the chances that the digital watermark will survive compression.

Workflow Digital watermarking should be one of the very last tasks you perform on an image, except for file compression.

Use the following recommended workflow:

- Make all necessary modifications to your image until it has the desired final appearance (this includes resizing and color correction).
- Embed the Digimarc watermark.
- If needed, compress the image by saving it in JPEG or GIF format.
- If the image is intended for printed output, perform the color separation.
- Read the watermark and use the signal strength meter to verify that the image contains a watermark of sufficient strength for your purposes.
- Publish the digital watermarked image.

Embedding digital watermarks

To embed a digital watermark, you must first register with Digimarc Corporation—which maintains a database of artists, designers, and photographers and their contact information—to get a unique Digimarc ID. You can then embed the Digimarc ID in your images, along with information such as the copyright year or a restricted-use identifier.

To embed a watermark:

1 Open the image that you want to watermark. You can embed only one digital watermark per image. The Embed Watermark filter won't work on an image that has been previously watermarked.

If you're working with a layered image, you should flatten the image before watermarking it; otherwise, the watermark will affect the active layer only.

Note: *You can add a digital watermark to an indexed-color image by first converting the image to RGB mode, embedding the watermark, and then converting the image back to indexed-color mode. However, the results may be inconsistent. To make sure that the watermark was embedded, run the Read Watermark filter.*

2 Choose Filter > Digimarc > Embed Watermark.

3 If you are using the filter for the first time, click the Personalize button. Get a Digimarc ID by clicking Info to launch your Web browser and visit the Digimarc Web site at www.digimarc.com, or by contacting Digimarc at the telephone number listed in the dialog box. Enter your PIN and ID number in the Digimarc ID text box, and click OK.

Once you have entered a Digimarc ID, the Personalize button becomes a Change button, allowing you to enter a new Digimarc ID.

4 Enter a copyright year, Transaction ID, or Image ID for the image.

5 Select any of the following image attributes:

- Restricted Use to limit the use of the image.
- Do Not Copy to specify that the image should not be copied.
- Adult Content to label the image contents as suitable for adults only. (Within Photoshop, this option does not limit access to adult-only images, but future versions of other applications may limit their display.)

6 For Target Output, specify whether the image is intended for monitor, Web, or print display.

7 For Watermark Durability, drag the slider or enter a value, as described in the next section.

8 Select Verify to automatically assess the watermark's durability after it is embedded. For more information, see "Using the signal strength meter" on page 309.

9 Click OK.

Using the Watermark Durability setting

The default Watermark Durability setting is designed to strike a balance between watermark durability and visibility in most images. However, you can adjust the Watermark Durability setting yourself to suit the needs of your images. Low values are less visible in an image but less durable, and may be damaged by applying filters or by performing some image-editing, printing, and scanning operations. High values are more durable but may display some visible noise in the image.

Your setting should depend on the intended use of the image and on the goals you've set for your watermarks. For example, it may be quite acceptable to use a higher Watermark Durability setting with JPEG images posted on a Web site. The higher durability helps to ensure the persistence of the watermark, and the increased visibility often is not noticeable with medium-resolution JPEG images. Digimarc recommends experimenting with various settings as part of your testing process to determine which setting works best for the majority of your images.

Using the signal strength meter

The signal strength meter helps you determine whether a watermark is durable enough to survive the intended use of the image. The signal strength meter is available only for images containing digital watermarks that you yourself have embedded.

Digimarc recommends that you check the signal strength meter before publishing your images. For example, if you often compress watermarked images for inclusion in a Web site, check the meter before posting the images. You can also use the signal strength meter to gauge the effectiveness of different Watermark Durability settings that you are experimenting with.

To check the signal strength meter:

Choose Filter > Digimarc > Read Watermark. The signal strength meter appears at the bottom of the dialog box.

You can also display the meter automatically by selecting Verify while embedding the watermark. See "Embedding digital watermarks" on page 308.

Setting preferences for saving files (Photoshop)

In Photoshop, you can set preferences for saving image previews, using file extensions, and maximizing file compatibility.

To set file saving preferences:

1 Do one of the following:

- In Windows, choose Edit > Preferences > File Handling.
- In Mac OS, choose Photoshop > Preferences > File Handling.

2 Set the following options:

Image Previews Choose an option for saving image previews: Never Save to save files without previews, Always Save to save files with specified previews, or Ask When Saving to assign previews on a file-by-file basis.

In Mac OS, you can select one or more of the following preview types (to speed the saving of files and minimize file size, select only the previews you need):

- Icon to use the preview as a file icon on the desktop.
- Full Size to save a 72-ppi version of the file for use in applications that can only open low-resolution Photoshop images. For non-EPS files, this is a PICT preview.
- Macintosh Thumbnail to display the preview in the Open dialog box.
- Windows Thumbnail to save a preview that can display on Windows systems.

File Extension (Windows) Choose an option for the three-character file extensions that indicate a file's format: Use Upper Case to append file extensions using uppercase characters, or Use Lower Case to append file extensions using lowercase characters.

Append File Extension (Mac OS) File extensions are necessary for files that you want to use on or transfer to a Windows system. Choose an option for appending extensions to filenames: Never to save files without file extensions, Always to append file extensions to filenames, or Ask When Saving to append file extensions on a file-by-file basis. Select Use Lower Case to append file extensions using lowercase characters.

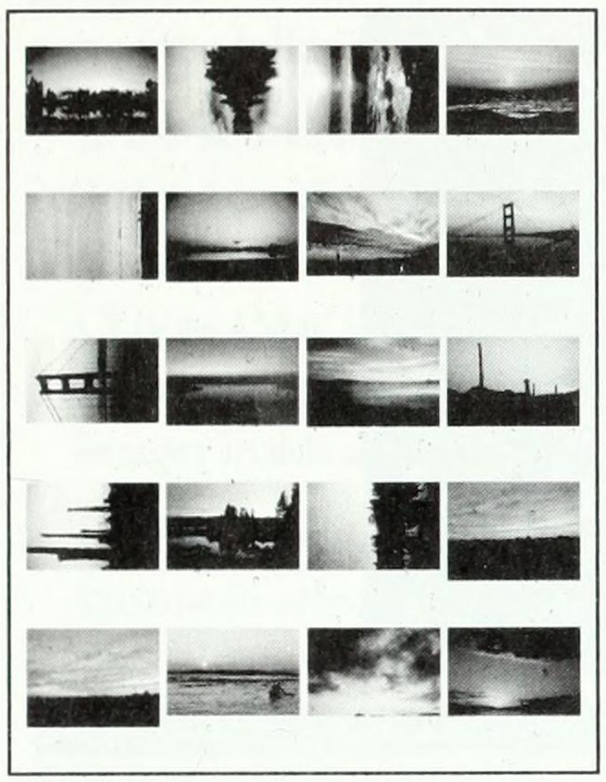
To toggle the Append File Extension option for a single file, hold down Option when you choose a file format in the Save As dialog box.

Creating multiple-image layouts (Photoshop)

You can export multiple images automatically as contact sheets and picture packages using Automate commands.

Creating contact sheets

Contact sheets let you easily preview and catalog groups of images by displaying a series of thumbnails on a single page. You can automatically create and place thumbnails on a page using the Contact Sheet II command.



Example of a contact sheet

To create a contact sheet:

1 Do one of the following:

- From the main menu, choose File > Automate > Contact Sheet II.
- In the File Browser, select a folder of images or specific image files, and then from the File Browser menu, choose Automate > Contact Sheet II. The Contact Sheet II command will use all the images displayed in the File Browser unless you select specific images before choosing the command. You can always choose a different folder of images or current open documents after the Contact Sheet II dialog box opens.

Note: *Click to select an image in the File Browser. Shift-click to select a series of images. Ctrl-click (Windows) or Command-click (Mac OS) to select noncontiguous images.*

2 In the Contact Sheet II dialog box, specify the images to use by choosing one of the following from the Use menu in the Source Images area:

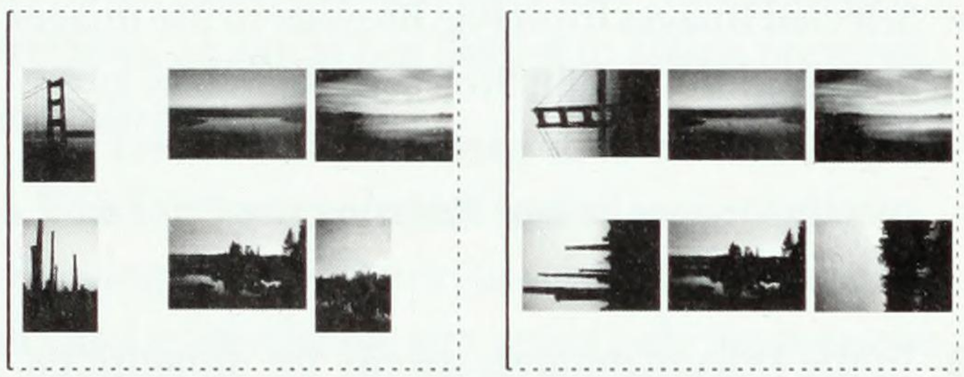
- Current Open Documents to use any image that is currently open in Photoshop.
- Folder, and then click Browse (Windows) or Choose (Mac OS) to specify the folder containing the images you want to use. Select Include All Subfolders to include images inside any subfolders.
- Selected Images from File Browser to use images displayed in the File Browser. All images in the File Browser will be used unless you select specific images before choosing the Contact Sheet II command.

3 In the Document area, specify the dimensions, resolution, and color mode for the contact sheet. Select Flatten All Layers to create a contact sheet with all images and text on a single layer. Deselect Flatten All Layers to create a contact sheet in which each image is on a separate layer and each caption is on a separate text layer.

4 In the Thumbnails area, specify layout options for the thumbnail previews.

- For Place, choose whether to arrange thumbnails across first (from left to right, then top to bottom) or down first (from top to bottom, then left to right).
- Enter the number of columns and rows that you want per contact sheet. The maximum dimensions for each thumbnail are displayed to the right, along with a visual preview of the specified layout.

- Select Use Auto-Spacing to let Photoshop automatically space the thumbnails in the contact sheet. Deselecting Use Auto-Spacing lets you specify the vertical and horizontal space around the thumbnails. The contact sheet preview in the dialog box updates as you specify the spacing.
- Select Rotate For Best Fit to rotate the images, regardless of their orientation, so they fit efficiently on a contact sheet.



The Rotate For Best Fit option off and on

5 Select Use Filename As Caption to label the thumbnails using their source image filenames. Use the menu to specify a caption font and font size.

6 Click OK.

Creating picture packages

With the Picture Package command, you can place multiple copies of a source image on a single page, similar to the photo packages traditionally sold by portrait studios. You also have the option of placing different images on the same page. You can choose from a variety of size and placement options to customize your package layout.

Example of a picture package layout

To create a picture package:

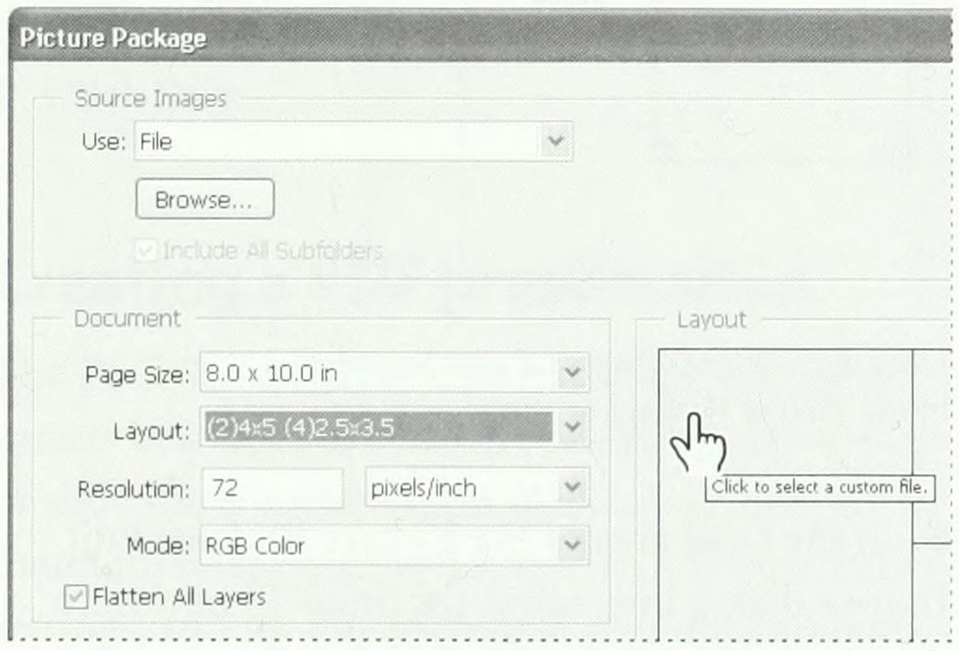
1 Do one of the following:

- Choose File > Automate > Picture Package. If you have multiple documents open, Picture Package uses the frontmost document.
- From the File Browser menu, choose Automate > Picture Package. The Picture Package command uses the first image listed in the File Browser unless you select a specific image before launching the Picture Package command.

If you're only using the frontmost document or a selected image from the File Browser for the Picture Package, you can skip to step 3.

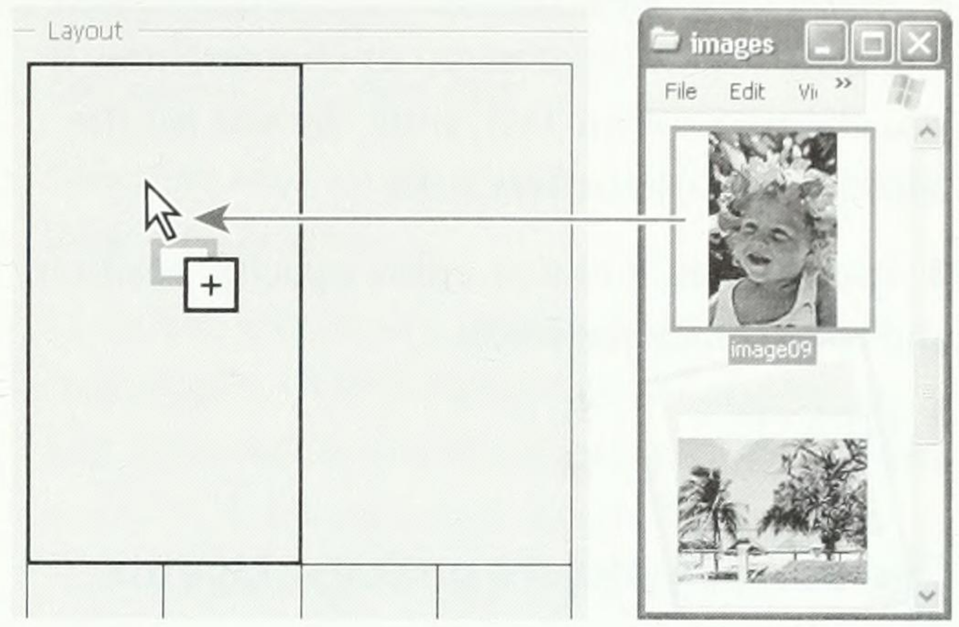
2 Add one or more images to the layout by doing one of the following:

- In the Source Images area of the Picture Package dialog box, choose either File or Folder from the Use menu and click Browse (Windows) or Choose (Mac OS). When choosing Folder, you can select Include All Subfolders to include images inside any subfolders.
- Click a placeholder in the preview layout and browse to select an image.



Clicking a placeholder in the Picture Package preview layout lets you browse to select an image.

- Drag an image from the desktop or a folder into a placeholder.



Dragging an image from the desktop into a placeholder to add an image in the Picture Package

You can change any image the layout by clicking a placeholder and browsing to select an image.

3 In the Document area of the Picture Package dialog box, select page size, layout, resolution, and color mode. A thumbnail of the chosen layout is displayed on the right side of the dialog box.

You can also create your own custom layouts. For more information, see "Customizing picture package layouts" on page 314.

4 Select Flatten All Layers to create a picture package with all images and label text on a single layer. Deselect Flatten All Layers to create a picture package where each image is on a separate layer and each label is on a separate text layer. Placing each image and label on a separate layer lets you update your picture package even after it's been saved. Keep in mind that not flattening layers increases the file size of your picture package.

5 In the Label area, choose the source for label text from the Content menu or choose None. If you choose Custom Text, enter the text for the label in the Custom Text field.

6 Specify font, font size, color, opacity, position, and rotation for the labels.

7 Click OK.

Customizing picture package layouts

You can modify existing layouts or create new layouts using the Picture Package Edit Layout feature. Your custom layouts are saved as text files that are stored in the Layouts folder inside the Presets folder. These saved layouts can be reused. The Picture Package Edit Layout feature uses a graphic interface that eliminates the need to write text files to create or modify layouts.

To customize a picture package layout:

1 Do one of the following:

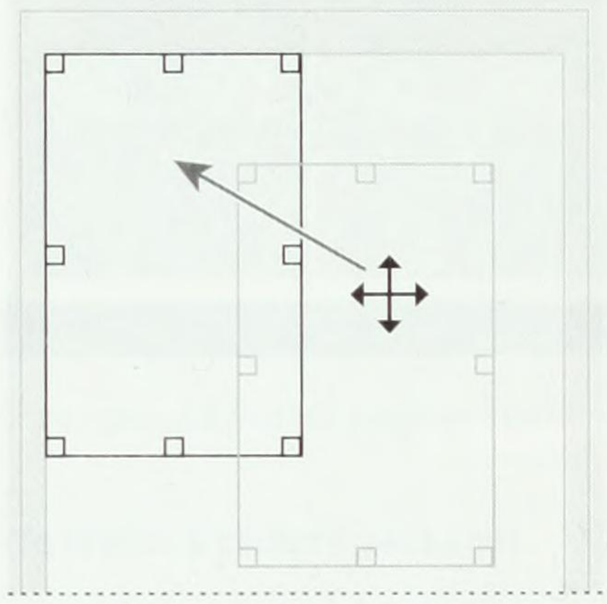
- Choose File > Automate > Picture Package.
- From the File Browser menu, choose Automate > Picture Package.

2 In the Picture Package dialog box, choose a layout from the Layout menu if you're creating a customizing an existing layout.

3 Click the Edit Layout button.

4 In the Picture Package Edit Layout dialog box, enter a name for the custom layout in the Name text box.

5 (Optional) In the Layout area of the Picture Package Edit Layout dialog box, choose a size from the Page Size menu or enter values in the Width and Height text boxes. You can use the Units menu to specify inches, centimeters, pixels, or millimeters.



Dragging a placeholder to a new location in the Picture Package layout

6 In the Grid area of the Picture Package Edit Layout dialog box, select the Snap To option to display a grid to help you position the elements in the custom layout. Enter a value in the Size text box to change the appearance of the grid.

7 To add or delete a placeholder, do one of the following:

- Click Add Zone to add a placeholder to the layout.
- Select a placeholder and click Delete Zone to delete it from the layout.

8 To modify a placeholder, select a placeholder and do one of the following:

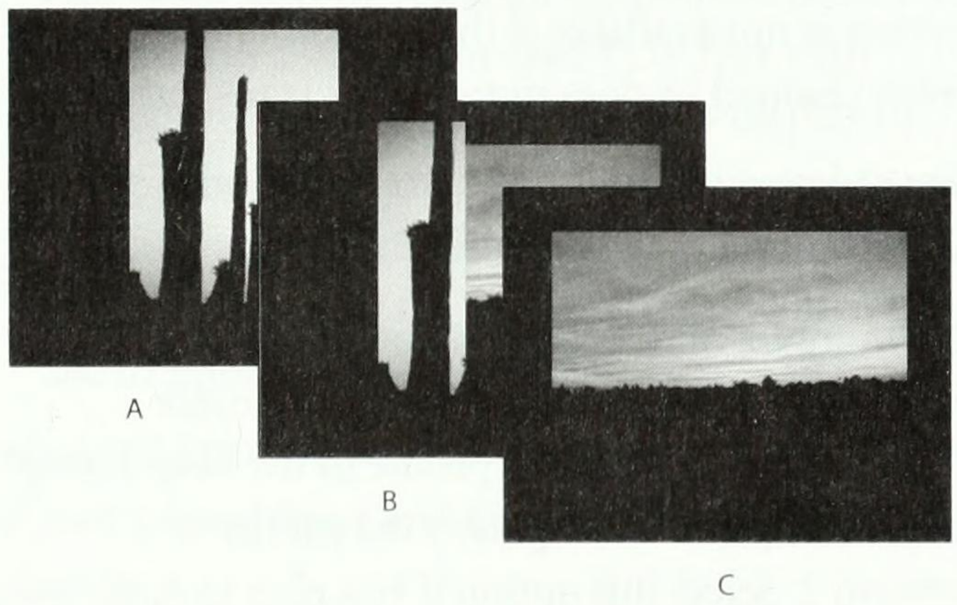
- Enter values in the Width and Height text boxes to resize a placeholder.

- Click and drag a handle to resize a placeholder. If you resize a rectangle placeholder with an image in it, Picture Package will snap the image within the vertical or horizontal placeholder, depending on the way the zone is being resized.
- Enter values in the X and Y text boxes to move a placeholder.
- Enter values in the Position and Size text boxes for the positioning and sizing a placeholder.
- Click and drag a placeholder to the location you want in the layout.

9 Click Save.

Creating a PDF presentation

The PDF Presentation command lets you use a variety of images to create a a multipage document or slide show presentation. You can set options to maintain image quality in the PDF, specify security settings, and set the document to open automatically as a slide show.



PDF Presentation as a slide show
***A.** First slide **B.** Wipe Left transition **C.** Second slide*

To create a multipage PDF Presentation:

1 Do one of the following:

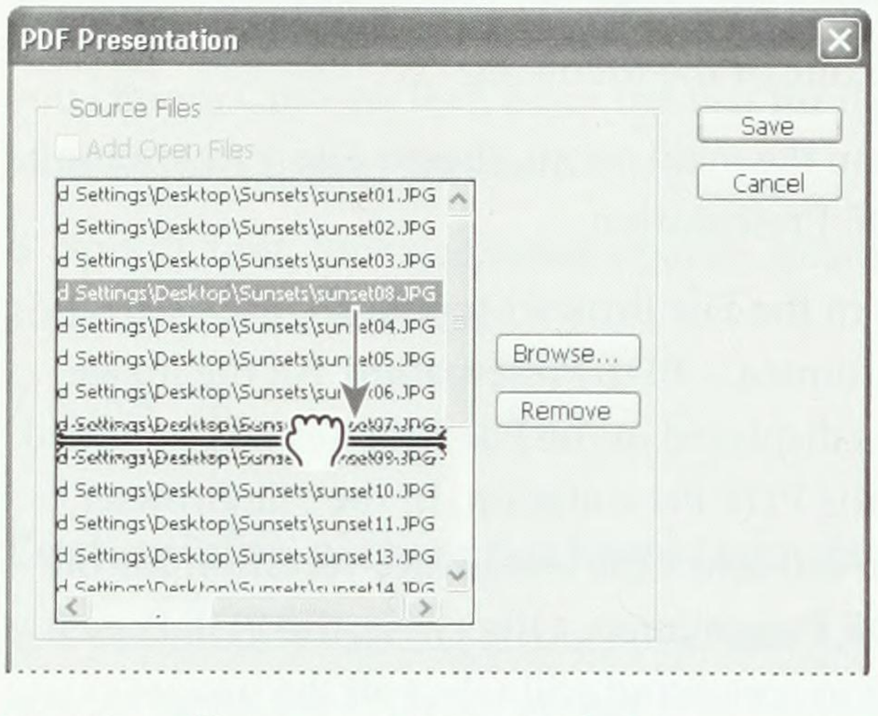
- From the main menu, choose File > Automate > PDF Presentation.
- From the File Browser menu, choose Automate > PDF Presentation. All the image files displayed in the File Browser will be added to the PDF Presentation. In the File Browser, you can select the image files you want for the PDF Presentation. Otherwise, the PDF Presentation command will select all the images currently displayed in the File Browser.

***Note:** Click a file to select it. Shift-click to select a series of files. Ctrl-click (Windows) or Command-click (Mac OS) to select noncontiguous files.*

2 If you did not launch the PDF Presentation command from the File Browser, click Browse and navigate to select files for the PDF Presentation. Select the Add Open Files option to add files already open in Photoshop.

You can remove any unwanted file by selecting it in the Source Files window, and then clicking the Remove button.

The files in the Source Files window are used to generate the pages in the PDF Presentation, starting with the topmost file for the first page and progressing down the list for subsequent pages. To reorder a file in the sequence, select the file and drag it to a new position in the list.



Dragging a file to a new position in the list

3 In the Output Options area of the PDF Presentation dialog box, select one of the following:

Multi-Page Document Creates a PDF document with the images on separate pages.

Presentation Creates a PDF slide show presentation.

4 Select the View PDF After Saving option if you want Adobe Acrobat or the Adobe Reader to open the PDF after it's created.

5 If you selected Presentation as the Output Option, in the Presentation Options area, you can specify the following options:

Advance Every [5] Seconds Specifies how long each image is displayed before the presentation advances to the next image. The default duration is 5 seconds.

Loop After Last Page Specifies that the presentation will automatically start over after reaching the end. Deselecting this option specifies that the presentation will stop after the final image is displayed.

Transition Specifies the transition from one image to the next.

6 Click Save.

7 In the Save dialog box, enter a name for the PDF Presentation and select a destination for the saved file. Click Save.

8 In the PDF Options dialog box, select the options you want, and click OK.

Encoding Determines the compression method (Zip or JPEG).

For more information about file compression, see Photoshop Help.

Save Transparency Preserves transparency when the file is opened in another application. (Transparency is always preserved when the file is reopened in Photoshop or ImageReady.) This option is not available if the file contains a spot color channel or does not contain transparency.

Image Interpolation Anti-aliases the printed appearance of a low-resolution image.

Downgrade Color Profile If you selected ICC Profile (Windows) or Embed Color Profile (Mac OS) for a version 4 profile in the Save dialog box, this option downgrades the profile to version 2. Select this option if you plan to open the file in an application that does not support version 4 profiles.

PDF Security Specifies security options such as password protection and restricted access to a file's content. Choose 40-bit or 128-bit RC4 encryption for a lower or higher level of security. For more information on PDF security, see "Saving files in Photoshop PDF format (Photoshop)" on page 291.

Include Vector Data Preserves any vector graphics (such as shapes and type) as resolution-independent objects, ensuring smoother output. When it is selected, you can select the following options:

- Embed Fonts ensures that all fonts used in the file are displayed and printed, even on computers that do not have the fonts installed. Bitmap fonts, fonts that don't allow PDF embedding, substitute fonts, type that uses the faux bold style, and warped type cannot be embedded. Selecting Embed Fonts increases the size of the saved file.
- Use Outlines for Text saves text as paths. Select this option if embedding fonts results in a file that is too large, if you plan to open the file in an application that cannot read PDF files with embedded fonts, or if a font fails to display or print correctly. Text saved as outlines is not searchable or selectable in a PDF viewer. You can, however, edit the text when you reopen the file in Photoshop.

Note: *The PDF viewer may display a substitute font if both Embed Fonts and Use Outlines for Text are deselected.*

9 Click OK. Photoshop closes the PDF options dialog box and creates the PDF Presentation. A dialog appears telling you if the PDF Presentation was successfully created.

Placing Photoshop images in other applications (Photoshop)

Photoshop provides a number of features to help you use images in other applications. Due to the integration between Adobe products, many Adobe applications can directly import Photoshop (PSD) format files and use Photoshop features like layers, layer styles, masks, transparency, and effects. Additionally, programs like Adobe GoLive can use variables set in ImageReady and Photoshop (topmost text layer only) to use in creating multiple-iterations of an image.

For more information on setting variables, see Photoshop Help.

Using image clipping paths to create transparency

You can use image clipping paths to define transparent areas in images you place in page-layout applications. In addition, Mac OS users can embed Photoshop images in many word-processor files.

For assistance with image clipping paths, choose Help > Export Transparent Image. This interactive wizard helps you prepare images with transparency for export to a page-layout application.

You may want to use only part of a Photoshop image when printing it or placing it in another application. For example, you may want to use a foreground object and exclude the background. An *image clipping path* lets you isolate the foreground object and make everything else transparent when the image is printed or placed in another application.

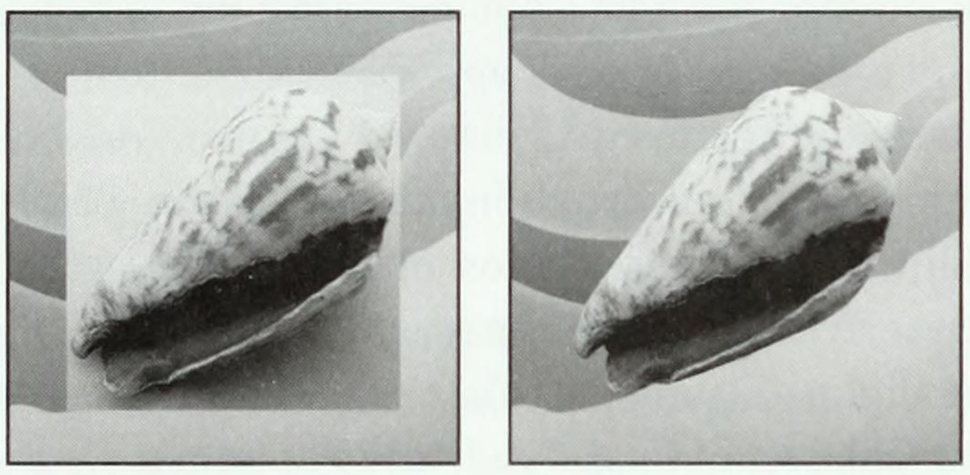


Image imported into Illustrator or InDesign without image clipping path (left), and with image clipping path (right)

To save a path as an image clipping path:

1 Draw a work path that defines the area of the image you want to show.

For more information on creating a work path or converting selection borders to paths, see Photoshop Help.

Note: *Paths are vector-based; therefore, they have hard edges. You cannot preserve the softness of a feathered edge, such as in a shadow, when creating an image clipping path.*

2 In the Paths palette, save the work path as a path.

3 Choose Clipping Path from the Paths palette menu, set the following options, and click OK:

- For Path, choose the path you want to save.
- For Flatness, leave the flatness value blank to print the image using the printer's default value. If you experience printing errors, enter a flatness value to determine how the PostScript interpreter approximates the curve. The lower the flatness value, the greater the number of straight lines used to draw the curve and the more accurate the curve.

Values can range from 0.2 to 100. In general, a flatness setting from 8 to 10 is recommended for high-resolution printing (1200 dpi to 2400 dpi), and a setting from 1 to 3 for low-resolution printing (300 dpi to 600 dpi).

4 If you plan to print the file using process colors, convert the file to CMYK mode.

For more information on converting between color modes, see Photoshop Help.

5 Save the file by doing one of the following:

- To print the file using a PostScript printer, save in Photoshop EPS, DCS, or PDF format.
- To print the file using a non-PostScript printer, save in TIFF format and export to Adobe InDesign, or to Adobe PageMaker® 5.0 or later.

Note: *If you import an EPS or DCS file with a TIFF preview into Adobe Illustrator, the image clipping path transparency may not display properly. This affects the on-screen preview only; it does not affect the printing behavior of the image clipping path on a PostScript printer.*

Printing image clipping paths

Sometimes an imagesetter has difficulty interpreting image clipping paths, or a printer finds the image clipping path too complex to print, resulting in a Limitcheck error or a general PostScript error. Sometimes you can print a complex path on a low-resolution printer without difficulty but run into problems when printing the same path on a high-resolution printer. This is because the lower-resolution printer simplifies the path, using fewer line segments to describe curves than does the high-resolution printer.

You can simplify an image clipping path in the following ways:

- Manually reduce the number of anchor points on the path.

For more information on adding, deleting, and converting anchor points, see Photoshop Help.

- Increase the tolerance setting used to create the path. To do this, load the existing path as a selection, choose Make Work Path from the Paths palette menu, and increase the tolerance setting (4 to 6 pixels is a good starting value). Then re-create the image clipping path.

For more information on converting paths to selection borders and using image clipping paths to create transparency, see Photoshop Help.

Exporting paths to Adobe Illustrator

The Paths to Illustrator command lets you export Photoshop paths as Adobe Illustrator files. This makes it easier to work with combined Photoshop and Illustrator artwork or to use Photoshop features on Illustrator artwork. For example, you may want to export a pen tool path and stroke it to use as a trap with an Photoshop clipping path you are printing in Illustrator. You can also use this feature to align Illustrator text or objects with Photoshop paths.

To use the Paths to Illustrator command:

1 Draw and save a path or convert an existing selection into a path.

2 Choose File > Export > Paths to Illustrator.

3 Choose a location for the exported path, and enter a filename. Make sure Work Path is chosen in the Write menu to export the path.

4 Click Save.

5 Open the file in Adobe Illustrator. You can manipulate the path or use the path to align Illustrator objects that you add to the file.

Note that the crop marks in Adobe Illustrator reflect the dimensions of the Photoshop image. The position of the path within the Photoshop image is maintained, provided you don't change the crop marks or move the path.

Object linking and embedding (OLE) (Windows only)

Photoshop is an OLE 2.0 server, which means it supports embedding or linking an image in an OLE container application (usually a word-processor or page-layout program). For example, you can insert Photoshop files and selections into other OLE applications such as Adobe PageMaker, Adobe FrameMaker, and Microsoft Word using copy and paste or other methods.

- Linking lets you place a link in the OLE container file that refers to the Photoshop file on the hard drive.
- Embedding lets you insert the Photoshop file into the OLE container file.

Once in the container application, an image can be double-clicked for editing in Photoshop. When closed in Photoshop, the image is updated in the container application.

To link or embed a selection or image in an OLE application:

Do one of the following:

- Copy a selection in Photoshop, and insert it in your OLE container application using the application's Paste Special command. Refer to your word-processing or page-layout application documentation for more instructions. Pasted selections can only be embedded, not linked.
- Use your OLE container application's Insert Object command to insert a new Photoshop image or existing Photoshop file as an OLE-embedded or OLE-linked object. Refer to your word-processing or page-layout application documentation for instructions.

To insert an unlinked screen-resolution bitmap into an OLE application:

With the Move tool , drag a selection to the OLE container application. When you drop the object, it appears as a 72-ppi bitmap, which cannot be automatically updated in Photoshop.

To modify and update a linked or embedded image in an OLE application:

1 Double-click the linked or embedded image in your word-processor or page-layout application to launch Photoshop (if it is not already running), and open the image for editing.

2 Modify the image as desired.

3 Do one of the following:

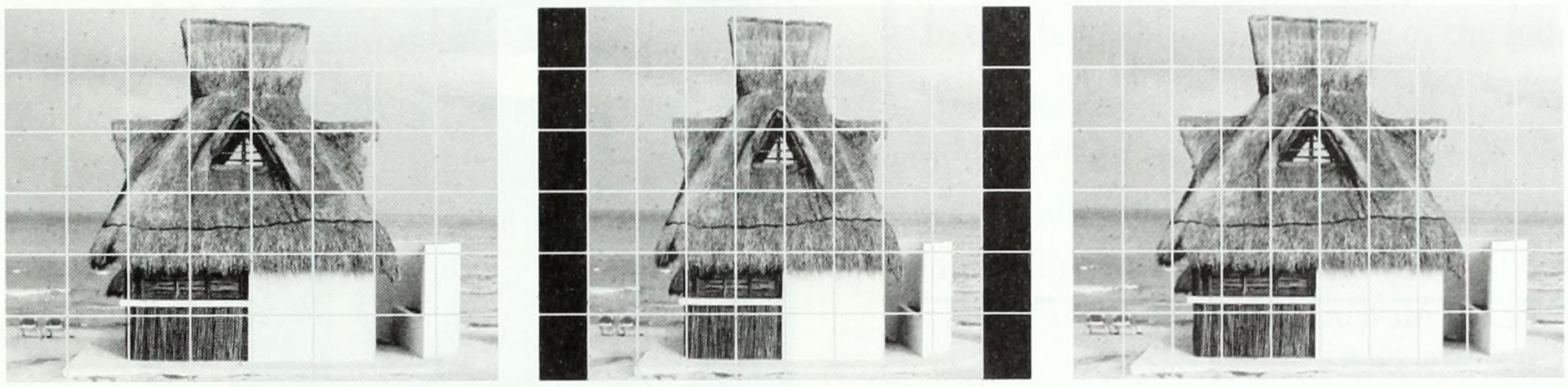
- For embedded images, close the file, or choose File > Update or File > Close & Return to *application name*.
- For linked images, save and close the file.

Note: *You can also modify linked files without first opening the container document. The linked image will be updated the next time you open the document in its OLE container application.*

Saving images for use in video

The preset file sizes in the Preset menu of the New file dialog let you create images at a size and pixel aspect ratio to compensate for scaling when incorporated into video. The presets also create a document with nonprinting guides that delineate the action safe and title safe areas of the image. Using the preset file sizes, you can produce images for specific video systems—NTSC, PAL, or HDTV.

An image on a computer monitor is made up of pixels that are essentially square. An image displayed on a video monitor is analog and does not involve pixel shape. Nonsquare pixels are the most commonly used by encoding devices for video. When importing an image created by a square-pixel graphics program into a video editing program like Adobe Premiere, the square pixels are scaled to the nonsquare pixels for video encoding. This scaling results in a distorted image.



Pixel aspect ratio scaling
A. *Square pixel image viewed on a computer monitor* ***B.*** *Square pixel image viewed on a video monitor*
C. *Same image with the correct pixel aspect ratio viewed on a video monitor*

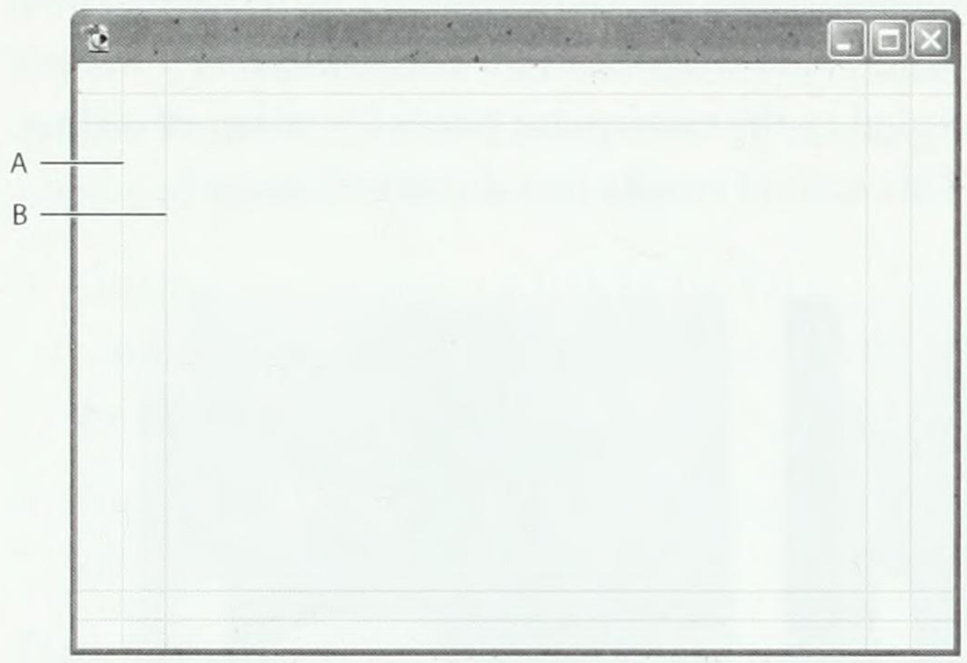
Other issues to keep in mind when creating images for use in video are as follows:

- Premiere does not support 16-bit-per-channel images.
- Premiere can import an individual layer from a multilayer Photoshop (PSD) file.
- If your Photoshop image file has transparency, Premiere preserves it.
- If your file uses a layer mask or multiple layers, you might not have to flatten the layers, but you might want to include a flattened copy of the PSD file in the PSD format to maximize backward compatibility. This should ensure that your Photoshop file will import successfully into Premiere.

To save images for use in video:

1 Create a new document.

2 In the New dialog box, choose the appropriate preset from the Preset menu for the video system that the image will be shown on.

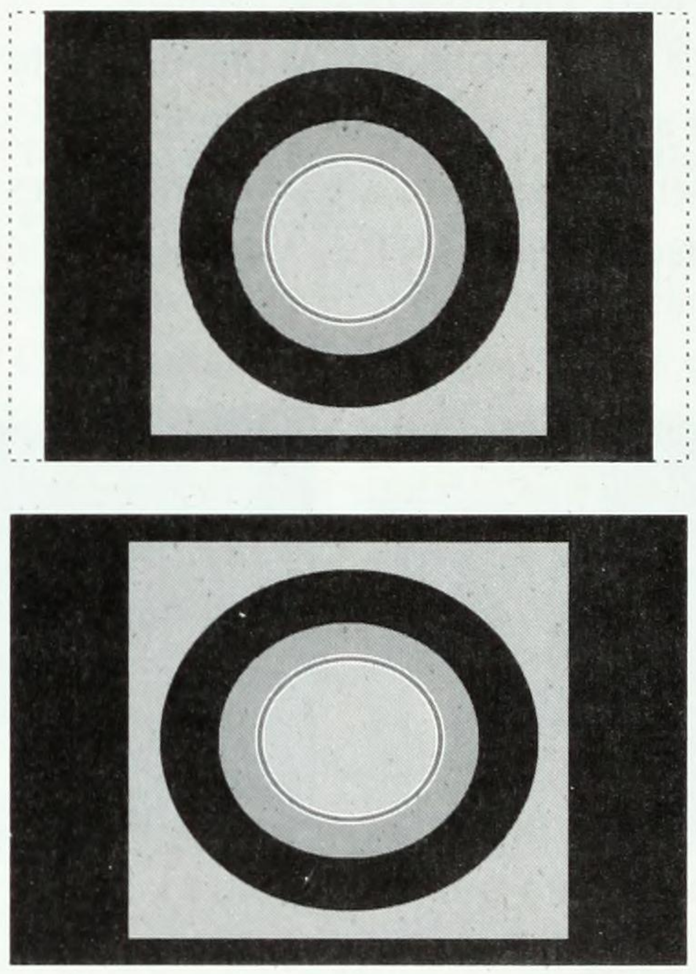


Video preset file size guides
***A.** Action safe area (outer rectangle)* ***B.** Title safe area (inner rectangle)*

For more options, click the Advanced button ⌃⌃ to specify a color profile and specific pixel aspect ratio. For more information on using the New dialog box, see "Creating new images" on page 78.

By default, non-square pixel documents open with the Pixel Aspect Ratio Correction enabled. This scales the image so you can preview how the image will appear on the output device (usually a video monitor).

3 (Optional) Choose View > Pixel Aspect Ratio Correction to turn off the scaling correction and view the image as it looks on a computer (square pixel) monitor.



Viewing an image of a circle in a NTSC DV 720x480 document with the Pixel Aspect Ratio Correction turned on (top), and with the Pixel Aspect Ratio Correction turned off (bottom)

You can simultaneously view an image with the Pixel Aspect Ratio Correction turned on and with the correction turned off. With the non-square pixel image open and the Pixel Aspect Ratio Correction enabled, choose Window > Arrange > New Window for [name of document]. With the new window active, choose View > Pixel Aspect Ratio Correction to turn the correction off.

To add images from another document to a non-square pixel document:

Do one of the following:

- Copy and paste an image.
- Drag an image from another document window.
- Choose File > Place, choose the file you want to place, and click the Place button.

Photoshop automatically converts and scales the image to the pixel aspect ratio of the non-square pixel document. Images brought in from Adobe Illustrator will also be properly scaled.

To assign a pixel aspect ratio value to an existing document:

With the square pixel document open, choose Image > Pixel Aspect Ratio and select a pixel aspect ratio.

To create a custom pixel aspect ratio:

1 With a document open, choose Image > Pixel Aspect Ratio > Custom Pixel Aspect Ratio.

2 In the Save Pixel Aspect Ratio dialog box, enter a value in the Factor text box, name the custom pixel aspect ratio, and click OK.

The new custom pixel aspect ratio will appear in the both the Pixel Aspect Ratio menu in the New dialog box and in the Pixel Aspect Ratio submenu in the Image menu.

To delete a pixel aspect ratio:

1 With a document open, choose Image > Pixel Aspect Ratio > Delete Pixel Aspect Ratio.

2 In the Delete Pixel Aspect Ratio dialog box, choose the option you want to delete from the Pixel Aspect Ratio menu and click Delete.

To reset the pixel aspect ratios:

1 With a document open, choose Image > Pixel Aspect Ratio > Reset Pixel Aspect Ratios.

2 In the dialog box, choose one of the following:

Append Replaces the current pixel aspect ratios with the default values plus any custom pixel aspect ratios. This option is useful if you deleted a default value and want to restore it to the menu but also want to retain any custom values.

Cancel Cancels the command.

OK Replaces the current pixel aspect ratios with the default values. Custom pixel aspect ratios are discarded.

Saving images for use in motion graphics

You can save images in Photoshop for use in motion graphics software like Adobe After Effects. A Photoshop (PSD) file can be imported directly into an After Effects project with the option of preserving individual layers, layer styles, transparent areas and layer masks, and adjustment layers. Importing layers makes it easy to prepare still images for animation.

You can reduce the rendering times and problems in After Effects by doing the following:

- Organize and name layers. If you change a layer name or delete a layer in a Photoshop document after you have imported it into After Effects, After Effects will not be able to find the renamed or deleted layer. The After Effects Project window lists that layer as Missing.
- Make sure that each layer has a unique name, because After Effects manages layers by their names. Duplicate layer names can cause problems when you update footage.
- If you want to import a composited version of a layered Photoshop file along with a layered version, choose Always for Maximize PSD File Compatibility in the File Handling Preferences dialog box.

If you are creating a Photoshop file for export to After Effects for use in a video project, use one of the file size presets for video in the New file dialog box. For more information on why you must specify specific pixel aspect ratios for use in video, see "Saving images for use in video" on page 321.

Chapter 16: Printing (Photoshop)

Printing is the process of sending your image to an output device. You can print on paper or film (positive or negative), to a printing plate, or directly to a digital printing press.

For information about printing part of an image, printing vector graphics, using color management when printing, printing images to a commercial printing press, printing duotones, and online services, see Photoshop Help.

About printing

Whether you are printing an image on your desktop printer or sending it to a prepress facility, knowing a few basics about printing will make the print job go more smoothly and help ensure that the finished image appears as intended.

Types of printing For most users, printing a file means that the Adobe Photoshop application sends the image to an inkjet printer to print a photograph. Photoshop can send your image to a variety of printing devices to be printed directly onto paper or to be converted to a positive or negative image on film. In the latter case, the film can be used to create a master plate for printing by a mechanical press.

Types of images The simplest types of images, such as line art, use only one color in one level of gray. A more complex image, such as a photograph, has color tones that vary within the image. This type of image is known as a *continuous-tone image.*

Halftoning To create the illusion of continuous tones when printed, images are broken down into a series of dots. When printing photos on a printing press, this process is called *halftoning.* Varying the sizes of the dots in a halftone screen creates the optical illusion of variations of gray or continuous color in the image.

Note: *Although inkjet printers also use dots to create the illusion of continuous tones, they use a different type of screen process that does not vary the size of the dots. Instead, inkjet printers use dots that have a uniform size and that are much tinier than the dots used by most printing presses.*

Color separation Artwork that will be commercially reproduced and that contains more than a single color must be printed on separate master plates, one for each color. This process is called *color separation* and most commonly uses cyan, yellow, magenta, and black (CMYK) inks. In Photoshop, you can adjust how the various plates are generated.

Quality of detail The detail in a printed image results from a combination of resolution and screen frequency. The higher an output device's resolution, the finer (higher) a screen ruling you can use. Many inkjet printer drivers offer simplified print settings for choosing higher-quality printing.

Printing images to a desktop printer

Unless you work in a commercial printing company or service bureau, you're probably printing images on a desktop printer—such as an inkjet, dye sublimation, or laser printer—and not to an image setter. Photoshop lets you control how your image will print.

Desktop printing considerations

Because your monitor displays an image using light and a desktop printer reproduces an image using inks, dyes, or pigments, it is impossible for a desktop printer to reproduce all the colors that can be displayed on a monitor. However, by incorporating certain procedures (such as a color management system) into your workflow, you can achieve predictable results when printing your images on a desktop printer. Here are some issues to consider when working with an image that you intend to print:

- If your image is in RGB mode, do not convert the document to CMYK mode when printing to a desktop printer. Work entirely in RGB mode.
- If you want a preview of what your image might look like on any device for which you have a profile, use the Proof Colors command.
- For accurate color reproduction between the screen and the printed page, it's absolutely necessary to incorporate color management into your workflow. You must work with a monitor that is calibrated and characterized. It's also necessary that you have a custom profile for the combination of your printer and the paper you're printing on. Using the profile supplied with your printer will only give average results (although the results are better than using no profiles at all).

For more information on maintaining consistent color when printing, soft-proofing colors, calibrating a monitor, and creating profiles, see Photoshop Help.

Printing images

Photoshop provides the following printing commands:

- Page Setup and Print display options that are determined by your printer, print drivers, and operating system.
- Print with Preview displays Photoshop's printing, output, and color management options.
- Print One Copy prints one copy of a file without displaying a dialog box.

Note: *You cannot print images directly from ImageReady. If you have an image open in ImageReady and need to print it, use the Edit in Photoshop command to open the image in Photoshop. Keep in mind that ImageReady images open at screen resolution (72 ppi); this resolution may not be high enough to produce a high-quality print.*

For more information on setting printing, output, and color management options, see Photoshop Help.

To print an image with its current options:

Do one of the following:

- Choose File > Print, and click Print or OK.
- To print one copy of a file without displaying a dialog box, choose File > Print One Copy.

Note: *By default, Photoshop prints a composite of all visible layers and channels. To print an individual layer or channel, make it the only visible layer or channel before choosing the Print command.*

To set printer and page setup options:

1 Choose File > Page Setup or File > Print.

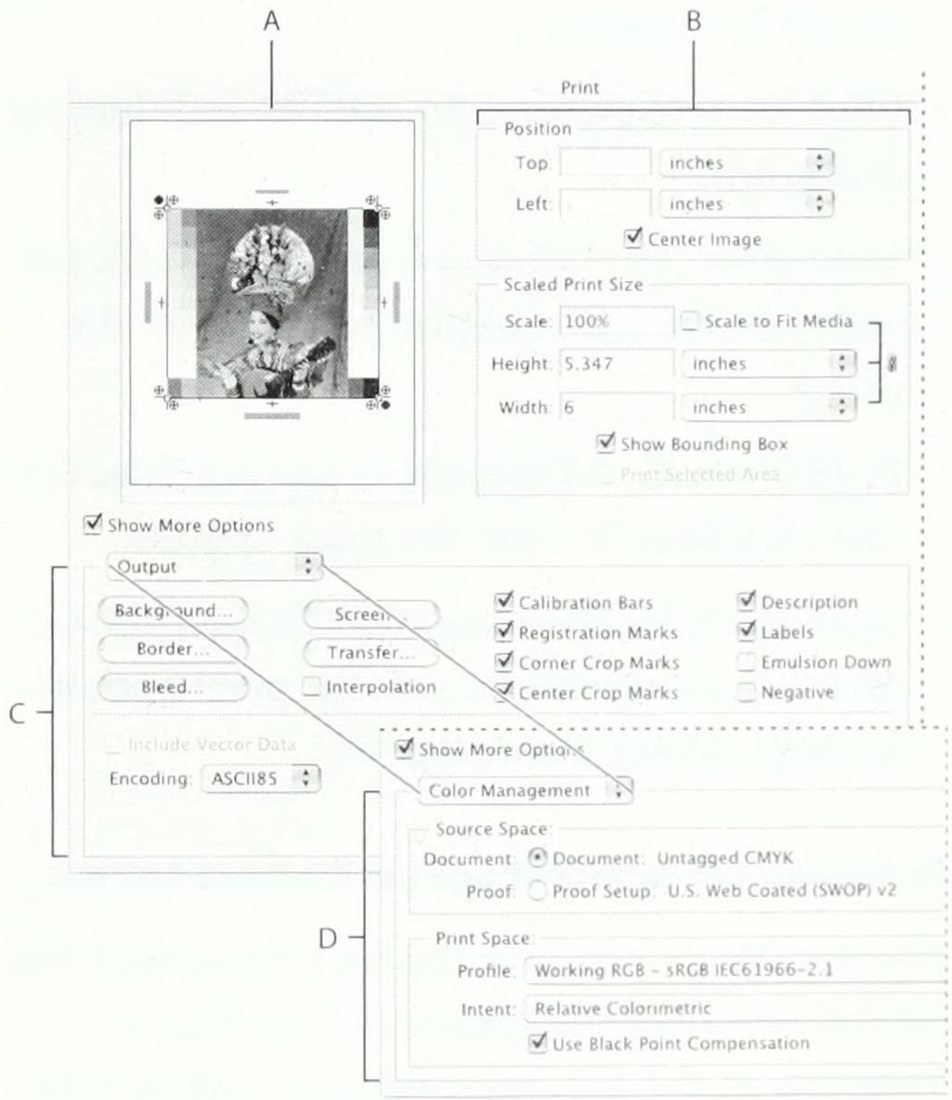
2 Select a printer from the pop-up list at the top of the dialog box.

3 Set additional options, such as paper size and layout, as desired. The available options depend on your printer, print drivers, and operating system.

If you plan to scale the printed image, choose the Print with Preview command and use the scaling options in the Print dialog box rather than the Page Setup dialog box. The Print dialog box is more helpful because it shows you a preview of the scaled image. Also, you don't want to set the scaling options in both the Page Setup and Print dialog boxes. This applies scaling twice, and the resulting image may not print at the size you intended.

To set Photoshop print options:

1 Choose File > Print with Preview.



Print with Preview dialog box
A. *Preview print* ***B.*** *Position and scale image*
C. *Specify options to prepare a file for prepress*
D. *Specify the document's working space and choose a color management profile for printing on a desktop printer*

2 Make sure Show More Options is selected. Then do one or more of the following:

- Adjust the position and scale of the image in relation to the selected paper size and orientation. (See "Positioning and scaling images" on page 328.)
- Set the Output options.
- Choose Color Management from the pop-up menu and set color management options.

3 Do one of the following:

- Click Print to print the image.
- Click Cancel to close the dialog box without saving the options.
- Click Done to preserve the options and close the dialog box.
- Hold down Alt (Windows) or Option (Mac OS) and click Print One to print one copy of the image.
- Hold down Alt (Windows) or Option (Mac OS) and click Reset to reset the print options.
- Hold down Alt (Windows) or Option (Mac OS) and click Remember to save the print options without closing the dialog box.

To preview the current image position and options:

Position the pointer over the file information box (at the bottom of the application window in Windows or the document window in Mac OS) and hold down the mouse button.

Positioning and scaling images

You can adjust the position and scale of an image and preview how the image will be printed on the selected paper using the Print with Preview command. The shaded border at the edge of the paper represents the margins of the selected paper; the printable area is white.

The base output size of an image is determined by the document size settings in the Image Size dialog box. (See "Changing image size and resolution" on page 54.) Scaling an image in the Print with Preview dialog box changes the size and resolution of the printed image only. For example, if you scale a 72-ppi image to 50% in the Print with Preview dialog box, the image will print at 144 ppi; however, the document size settings in the Image Size dialog box will not change.

Many printer drivers, such as AdobePS and LaserWriter, provide a scaling option in the Page Setup dialog box. This scaling affects everything on the page, including the size of all page marks such as crop marks and captions, whereas the scaling percentage provided by the Print with Preview command affects only the size of the printed image (and not the size of page marks).

Important: *The Print with Preview command may not reflect accurate values for Scale, Height, and Width if you set a scaling percentage in the Page Setup dialog box. To avoid inaccurate scaling, specify scaling using the Print with Preview command rather than the Page Setup command; do not enter a scaling percentage in both dialog boxes.*

To reposition an image on the paper:

Choose File > Print with Preview, and do one of the following:

- Select the Center Image option to center the image in the printable area.
- Deselect the Center Image option and then enter values for Top and Left to position the image numerically.
- Deselect the Center Image option and then drag the image in the preview area.

To scale the print size of an image:

Choose File > Print with Preview, and do one of the following:

- Click Scale to Fit Media to fit the image within the printable area of the selected paper.
- Enter values for Height and Width to rescale the image numerically.
- Select Show Bounding Box, and drag a bounding box handle in the preview area to achieve the desired scale.

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